

# Washington Transportation Plan Update

## *Phase 2 Workshop*

Demand – Capacity Imbalance

Moving Freight

**Douglas B. MacDonald**  
Secretary

**Paula Hammond**  
Chief of Staff

**Elizabeth Robbins**  
Manager  
Policy Development &  
Regional Coordination

**Barbara Ivanov**  
Director  
Freight Strategy & Policy

and  
**WSDOT Program Managers**  
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**Washington State  
Department of Transportation**

# Moving Freight

## Guiding Principles (Statutory and Commission Policy) for Moving Freight

Increase access and mobility options for freight. **(23 CFR 135)**

Enhance transportation system integration and connectivity across and between modes statewide for freight. **(23 CFR 135)**

The Commission shall identify projects that yield freight mobility benefits or alleviate the impacts of freight mobility upon affected communities. **(RCW 47.05.051)**

Relieve congestion and efficiently move freight and goods. **(RCW 47.06)**

Freight mobility strategic investment board created to designate strategic freight corridors and prioritize projects that meet criteria. **(RCW 47.06A)**

Better planning, cooperation and financial assistance is necessary to maintain and improve the freight rail system. **(RCW 47.76.200)**

### **Commission:**

Freight movement is reliable and transportation investments support Washington's strategic trade advantage.

Support investments in freight transportation services and infrastructure that maintain Washington's competitive geographic advantage for world and domestic trade, and contribute to the economic productivity of the state.

To the degree possible, streamline laws and regulations impacting freight transportation to allow ease of compliance and coordinated administration among jurisdictions.

## What Might This Mean?

- Efficiency and reliability for the movement of freight and goods in the State of Washington is important for supporting the state's trade economy, for supporting the productivity of the state's growers and manufacturers, and for helping to hold down the costs of goods consumed by our citizens.
- Freight transportation investment must be evaluated *both* from the standpoint of freight needs (for example, access to major distribution centers and the ports) and of synergies with transportation with non-freight investment (e.g., corridor investments for chokepoint relief and safety improvements).
- Intermodal connections can be particularly important in selecting candidates for freight investment (e.g., sea-rail; truck-rail; air carrier-delivery service).
- New technologies to be applied to improve freight transportation system performance are as important as in any other mode.

# **Moving Freight**

## **Overview**

- I. Background Information (Review of Phase I)**
- II. Emerging WTP Freight Recommendations**

# Moving Freight

## **I. Global Gateways**

International and National Trade Flows through Washington

## **II. Made in Washington**

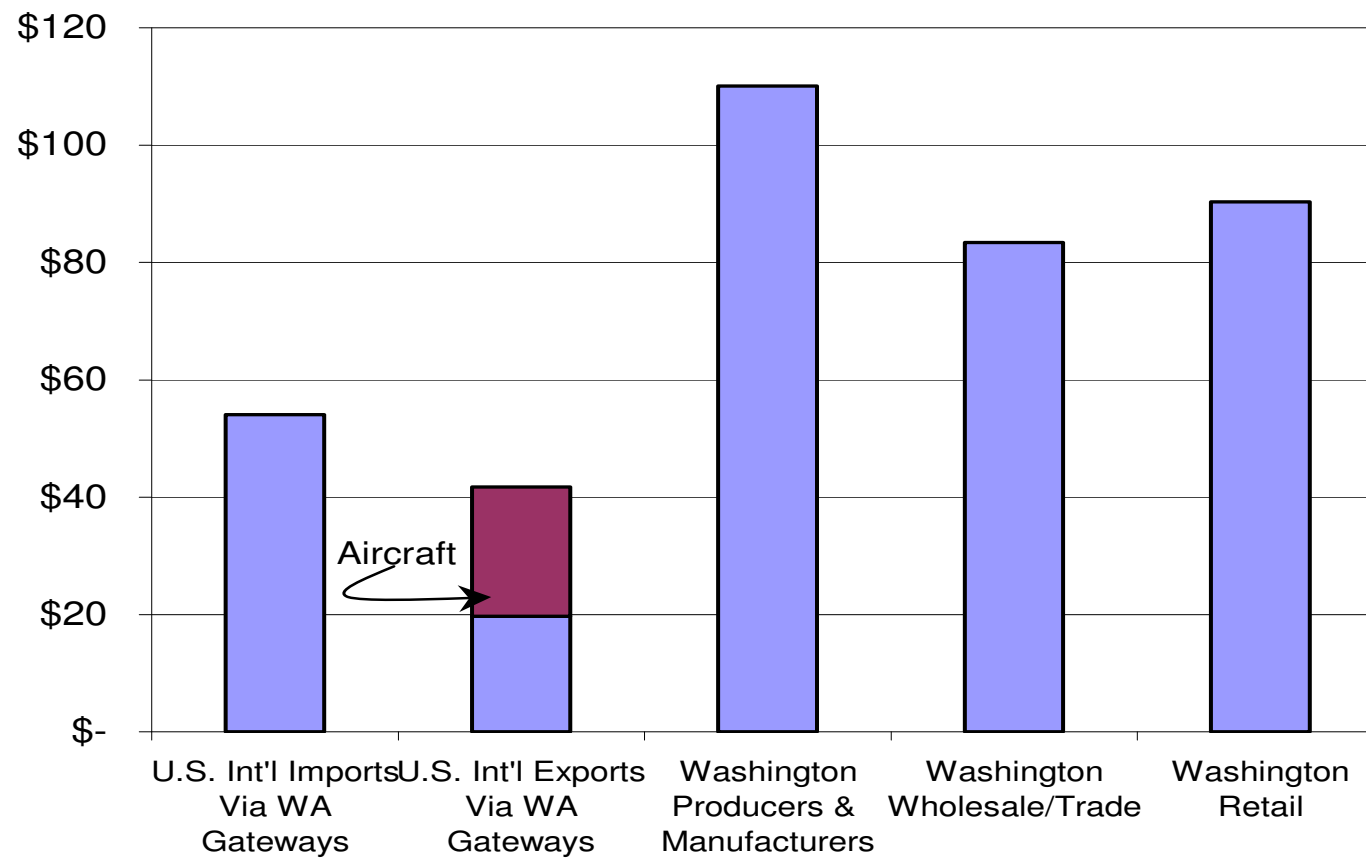
Regional Economies Rely on the Freight System

## **III. Delivering Goods To You**

Washington's Retail and Wholesale Distribution System



# Washington State Value of Freight Shipments (2003: Billions of Dollars)



Source: U.S. Customs Bureau; WA State Dept. of Revenue.

# Purpose of the WTP Freight Report

To provide decision makers with a data-based rationale for strategic investment in Washington State's freight system.

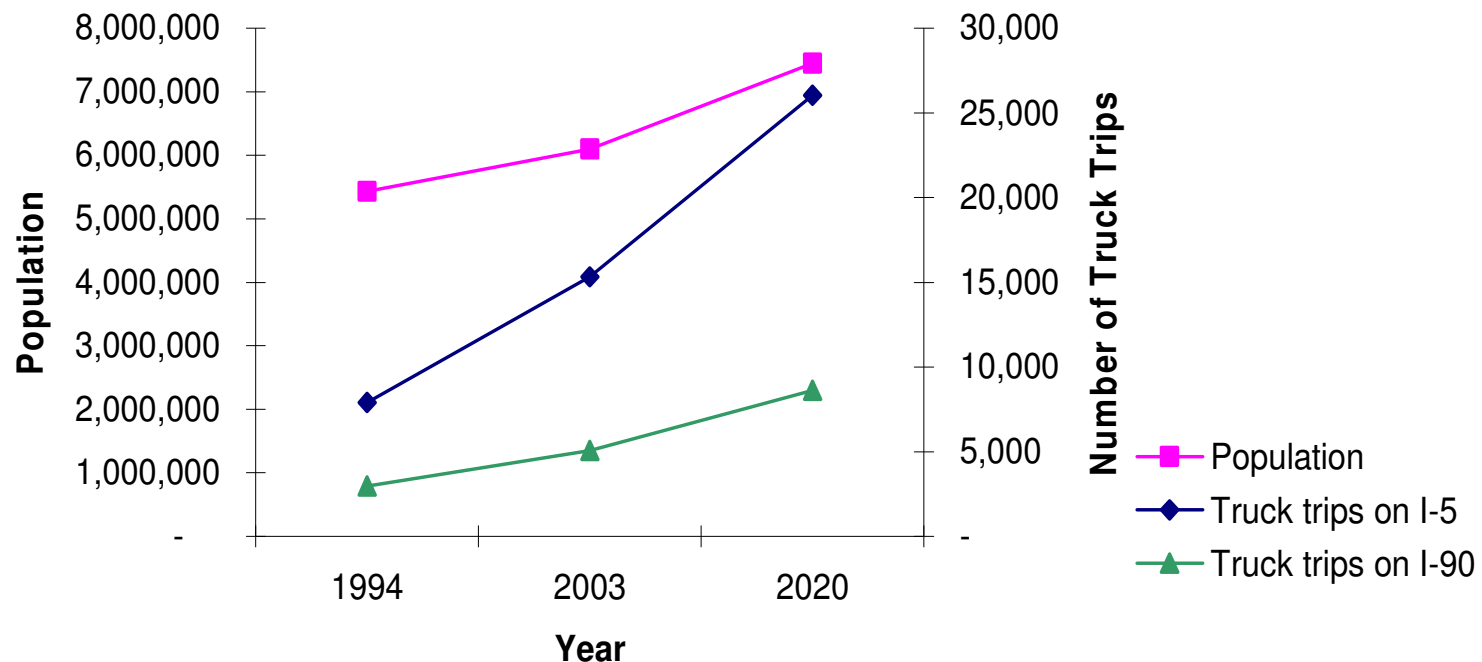
The report's analysis explains:

- Who are the customers of the state's freight system
- Why freight customers matter in terms of jobs and contribution to Gross State Revenues
- What performance the customers expect from the freight system
- Where key performance gaps are located
- How to make the most productive, strategic investments in Washington State's freight system

# Freight Volumes in Washington are Growing Twice as Fast as the State's Population

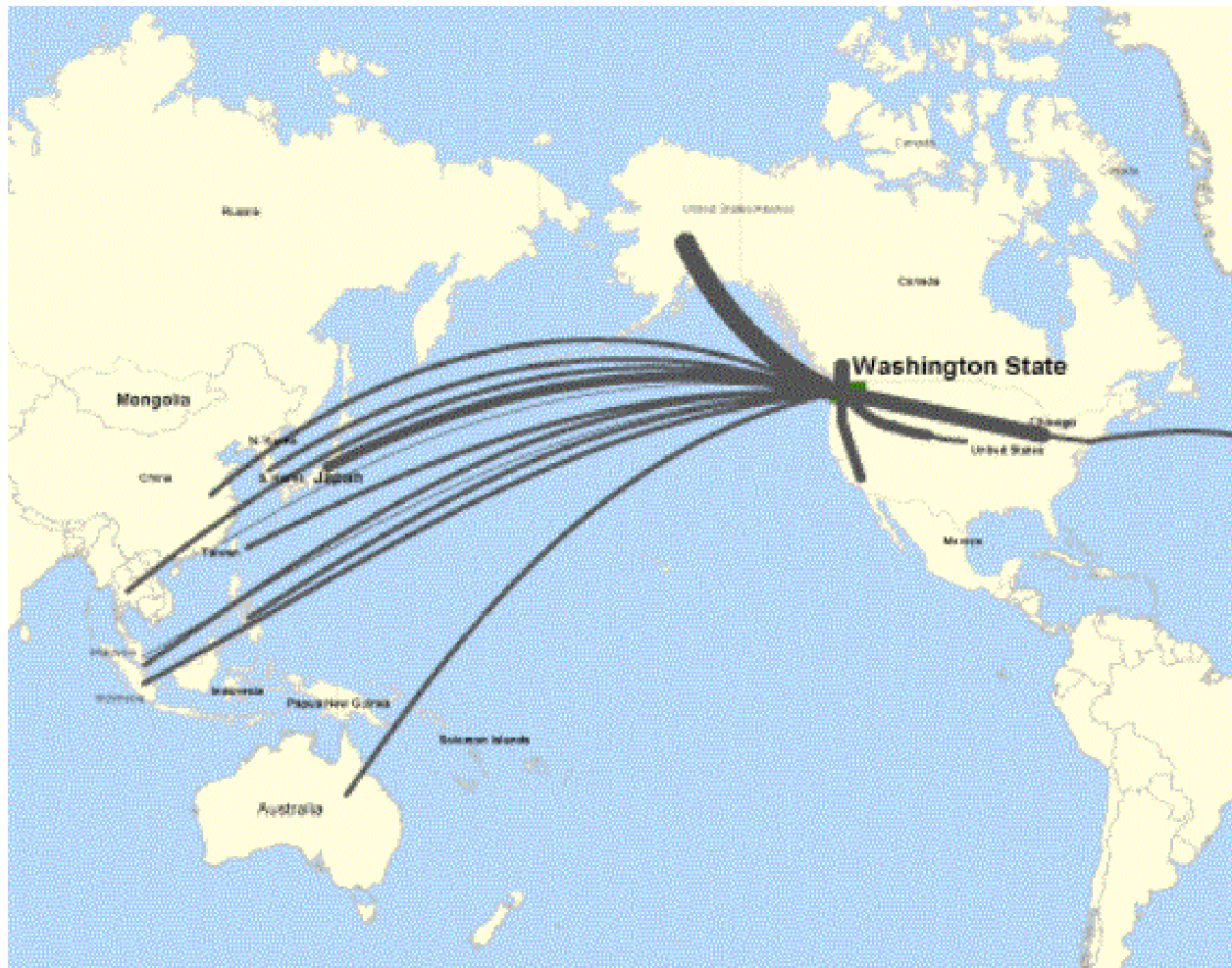
Freight growth in Washington is fueled by globalization, new competitive industry trends and technologies.

**Washington State's Population Growth and Growth of Truck Trips on I-5 and I-90**



# I. Global Gateways

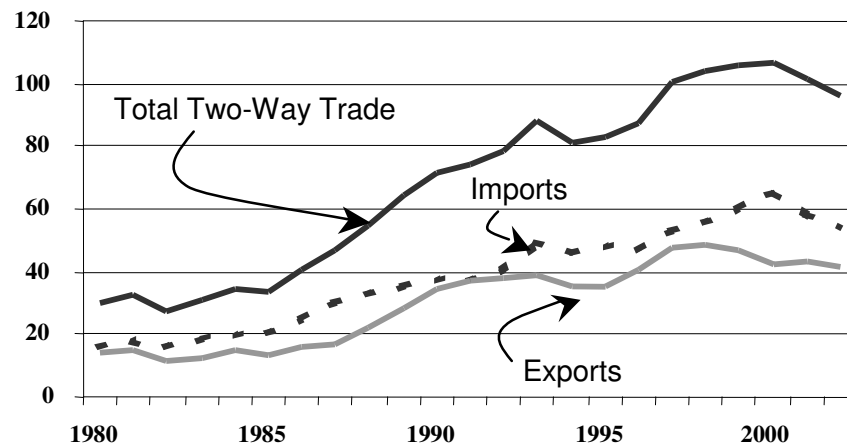
## International and National Trade Flows Through Washington



# Value of Trade at Washington Gateways Increases

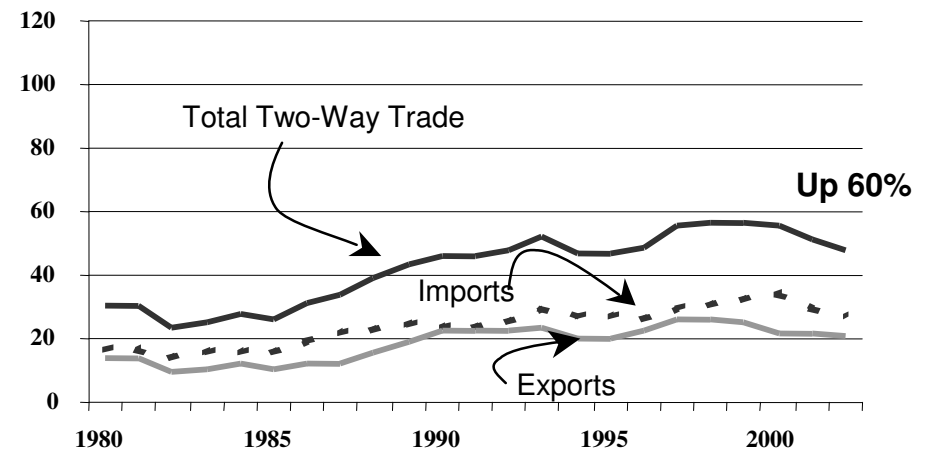
## International Trade Entering and Leaving Washington State

Nominal Dollars in Billion \$



## International Trade Entering and Leaving Washington State

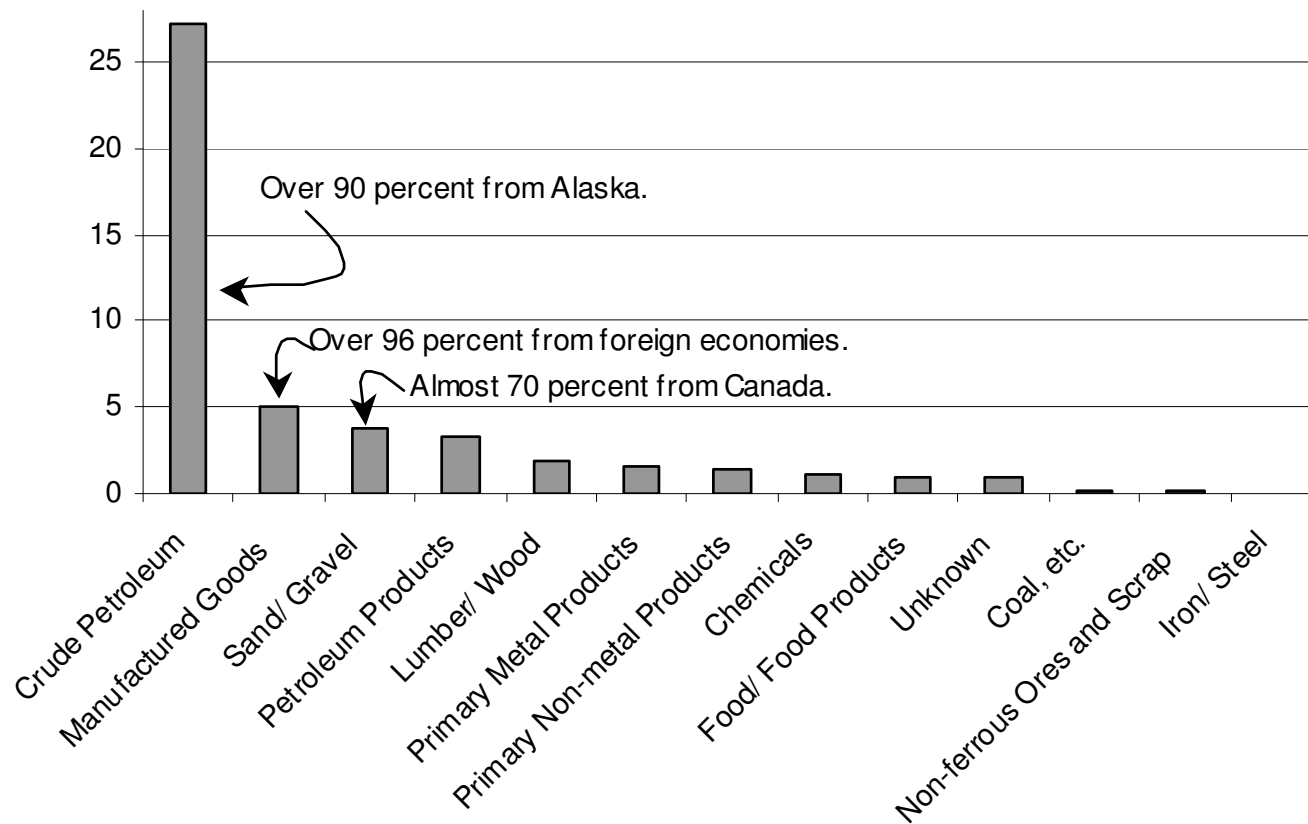
Real Dollars in Billion \$



\* Based on U.S. Census Bureau totals, as provided by the U.S. Department of Commerce and published in the 1995 and 2003 Washington State Data Book.

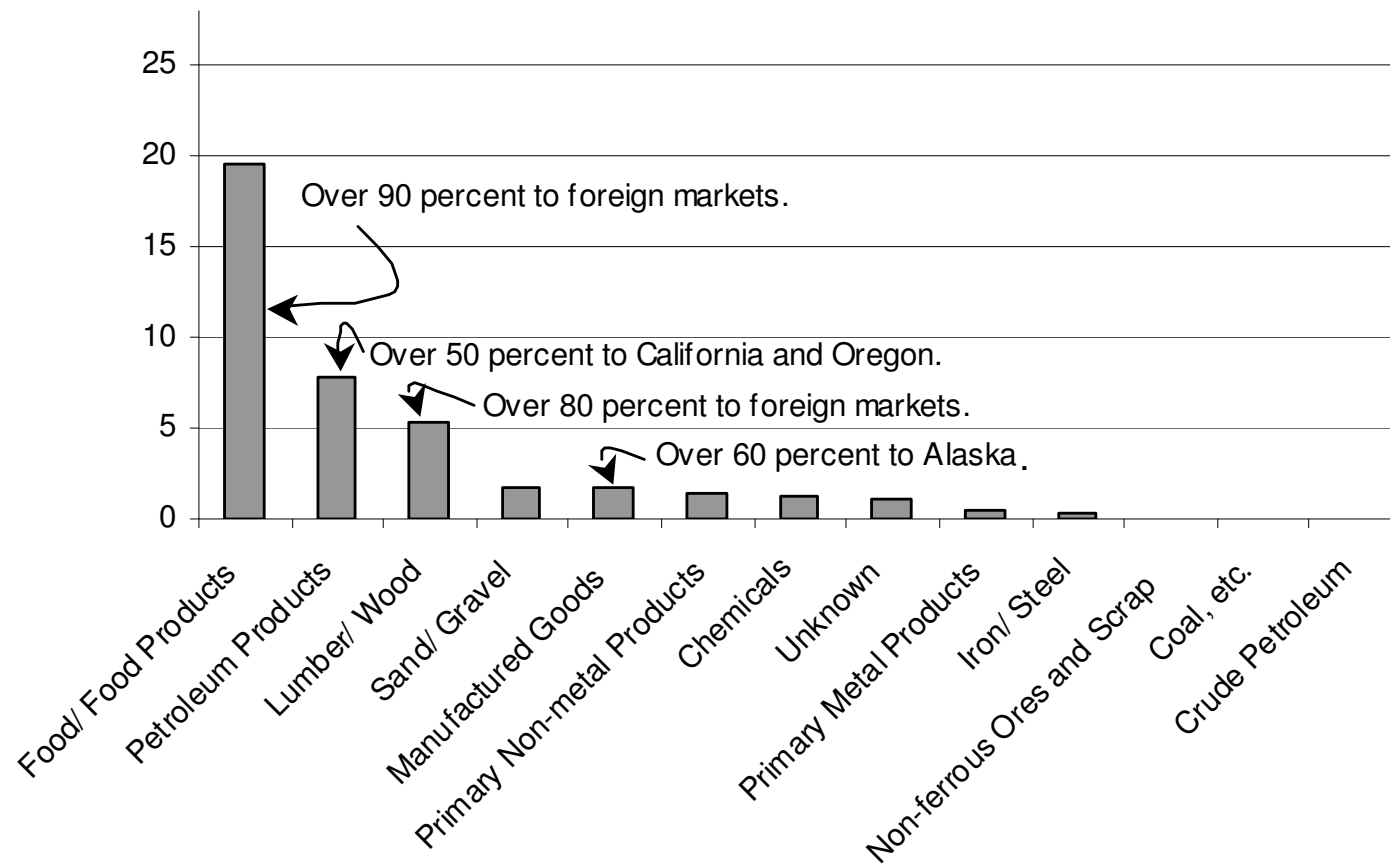
# By Tonnage, Crude Petroleum Dwarfs All Other Waterborne Inbound Commodities

Goods Entering Washington State by Water  
2002, Million Tons



# By Tonnage, Food/ Food Products Outweigh Other Waterborne Outbound Commodities

**Goods Leaving Washington State by Water**  
2002, Million Tons

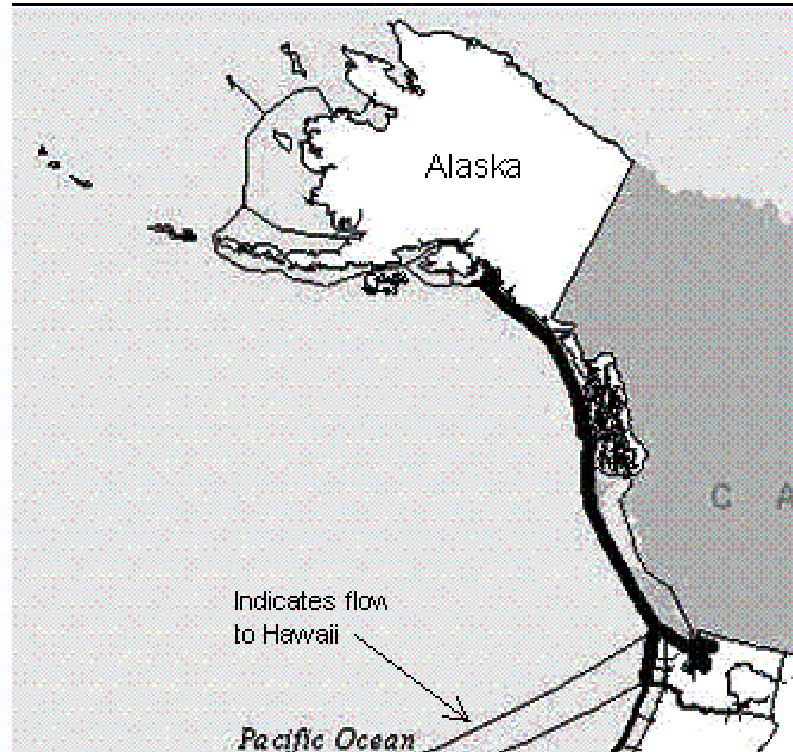


# Washington is the Gateway to and from Alaska

By value and volume – 24.62 million tons – the most significant commodity shipped to Washington State from Alaska, using the inland waterway and landing at refineries, is crude petroleum.

Washington State ships manufactured goods, food and food products, north to Alaska.

Domestic Freight Flows Moving By Water To and From Washington

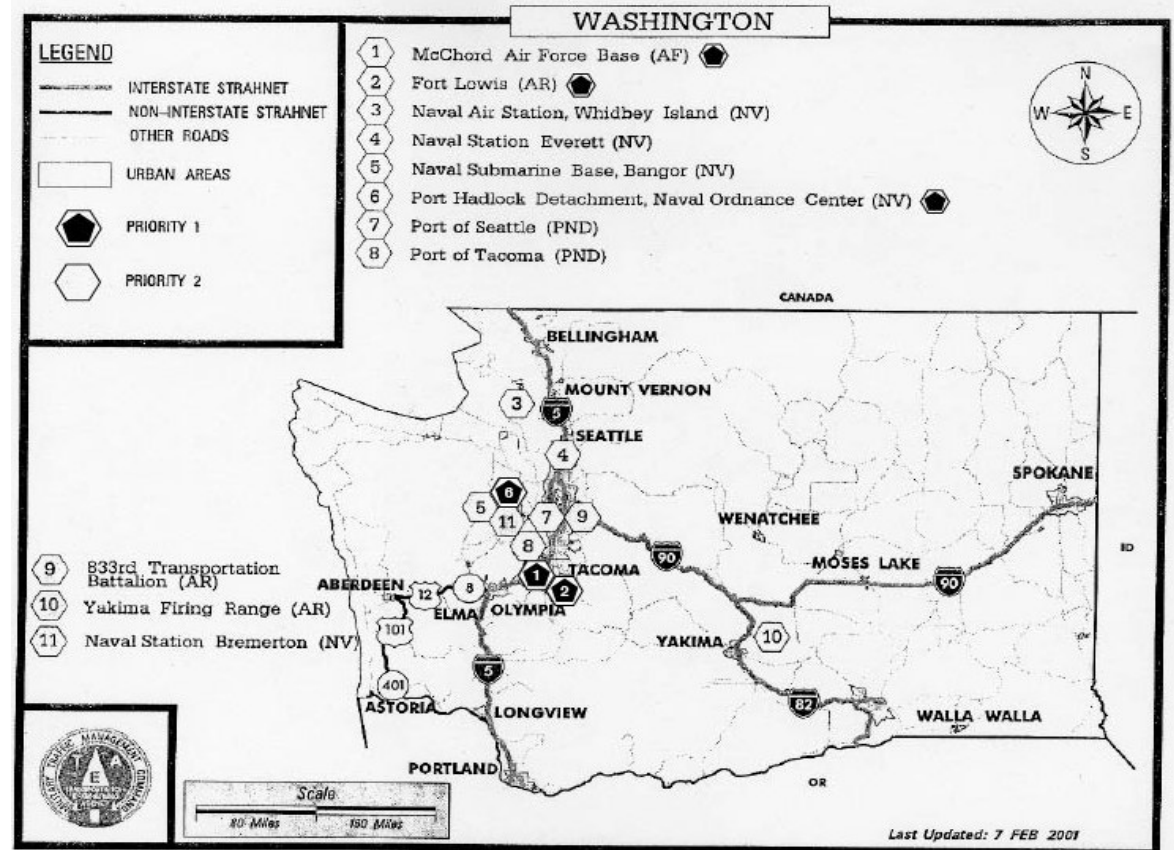


\* Adapted from *Washington Total Domestic Water Flows, 1998* (USDOT)

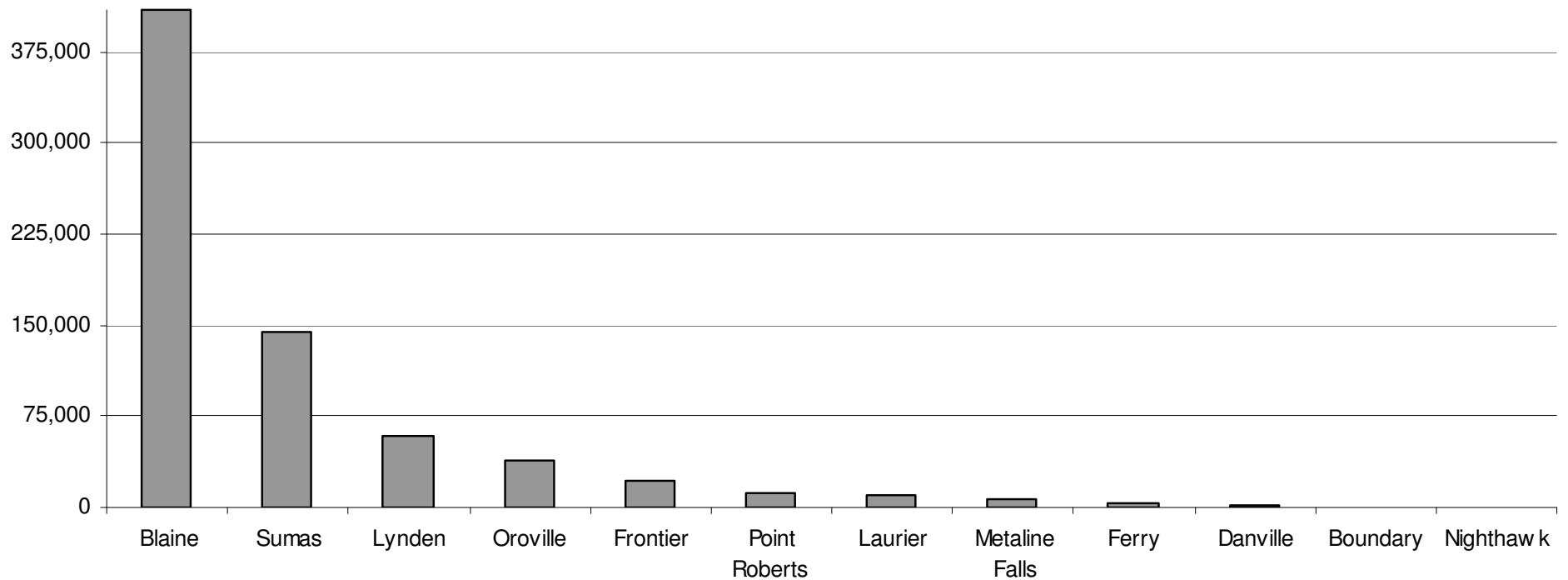


# Washington Gateways Play an Essential Role in Supporting National Security

- Fort Lewis is a key U.S. location for gathering, staging and mobilizing forces and material.
- During a major regional conflict, cargo from all over the United States will rush by road and rail to Fort Lewis.
- Ports of Tacoma and Olympia: Pacific Northwest strategic ports supporting Fort Lewis units.
- Port of Seattle: sustainment port to ship supplies to troops.
- Port Hadlock Naval Ordnance Center: one of nine national centers.



# Trucks Entering Washington from Canada 2002 (Number of Trucks)



*\*Source: U.S. Department of Transportation, Bureau of Transportation Statistics, 2003*

## II. Made in Washington

### Regional Economies Rely on the Freight System

**Agriculture: \$5.6 billion** in food and agricultural products in 2002.

Freight transportation is especially important for Washington agriculture as the state produces up to twenty times as much food as it consumes and is far from most of the nation's consumers.

**Manufacturing: \$88.3 billion** in Gross Business Revenues in 2003, 21.3 percent of the total State Gross Business Income.

**Construction: Gross Business Revenues topped \$27 billion** in 2003.

**Forestry: Value-added wood and paper products produced \$12.7 billion** of Washington's Gross Business Revenues in 2003.

# Regional Economies Rely on Freight System



# Southeast Washington: Wheat Producer for the World

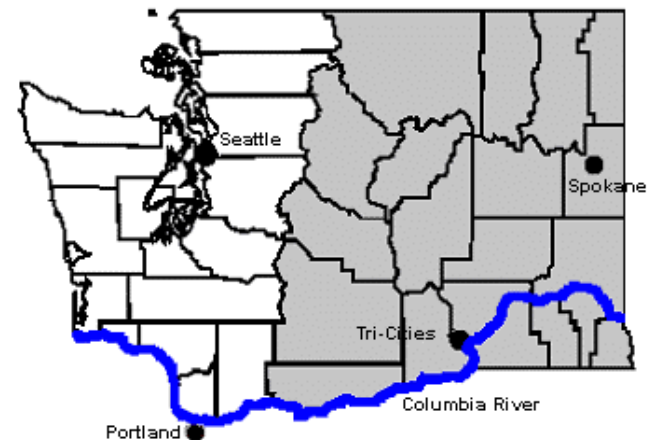
- Washington ranked third in U.S. wheat production.
- 130 million bushels grown on 2.7 million acres.
- 85% is sold to international markets.
- Contributed \$1.18 billion dollars to the state's economy in 2002, mostly to Eastern Washington.



## Columbia – Snake River Transportation System

92% of SE Washington wheat is shipped to Columbia River ports

51% by truck/barge; 19% by bulk rail, 30% truck to storage or non-bulk rail



Modal choices are at risk:

- Barge due to environmental issues and federal policies
- Truck due to weight restrictions on local roads during spring thaw
- Rail branch lines and short line rail that ship low volumes cannot recover capital costs and may be short lined or abandoned, respectively

# Columbia Basin and North Central Washington: Growing and Processing Center

Washington ranks first in U.S.  
apple production: \$1.02 billion sales;  
31% exported to international markets.

Washington ranked second in U.S. potato  
production: \$3 billion annual sales of  
potatoes/products; 90% consumed in U.S.

Over 80,000 refrigerated truckloads of  
potatoes and 43,000 refrigerated  
truckloads of apples were shipped from  
Washington to east coast markets in  
2000.

## Big Transportation Issues:

- Solution to reposition refrigerated equipment
- I-90 Snoqualmie Pass improvements to avoid severe weather closures



## 87,500 Jobs Rely on Freight

|                          | Jobs   | Average Wage |
|--------------------------|--------|--------------|
| Agriculture              | 42,013 | \$16,665     |
| Manufacturing            | 22,993 | \$33,779     |
| Wholesale/Trade          | 8,467  | \$31,051     |
| Transportation/Utilities | 13,984 | \$38,469     |

# Central Puget Sound: Westside Center of Manufacturing and Commerce

- The Boeing Company employed 53,000 in Washington State in 2004. Boeing Aircraft reported \$22.4 billion revenues in 2003.
- 4,433 mid-sized manufacturing firms did business in King, Pierce, and Snohomish Counties in 2003. About 65 percent are very satisfied with current freight system performance.
- The maritime industry employed over 22,000 in King County in 2002; annual output totaled \$2.1 billion.

## 484,000 Jobs Directly Depend on Freight

|                          | Jobs    | Average Wage |
|--------------------------|---------|--------------|
| Construction             | 92,406  | \$36,551     |
| Manufacturing            | 202,988 | \$44,625     |
| Wholesale/Trade          | 94,311  | \$41,883     |
| Transportation/Utilities | 94,040  | \$44,752     |

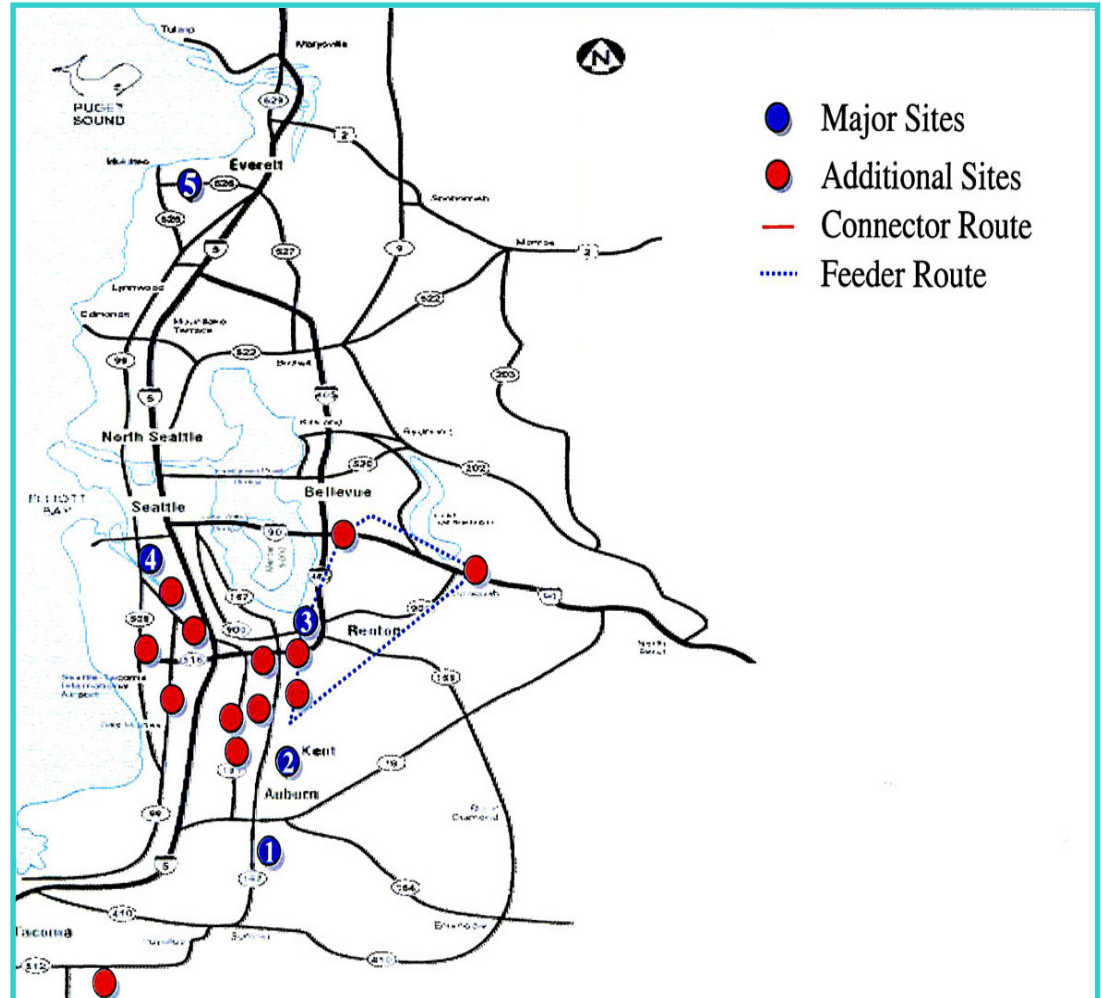
## Freight System Views: Trucking

- Only 50 percent of trucking firms based in Central Puget Sound report high satisfaction with the current performance of the freight system.
- This compares to 62 percent of Spokane trucking carriers and 54 percent of Vancouver/Portland metro carriers with high satisfaction ratings.



# Central Puget Sound: The Boeing Company

Beginning in 2006, the  
oversize 7E7 empennage  
(horizontal and vertical tail  
surfaces) will be trucked up  
Highway 167, I-405 and I-5  
from the structural composites  
plant in Frederickson to final  
assembly in Everett.





# Spokane Region: Eastside Center of Manufacturing and Commerce

## Freight System Views:

Seventy-nine percent of Spokane manufacturers and 62 percent of Spokane trucking companies are very satisfied with current freight system performance.

## What is the Freight Users' Goal?

On-time: 56%

Price: 26%

## Big Transportation Issues:

- I-90 Snoqualmie Pass improvements to avoid winter weather closures
- I-405 and I-5 improvements as they deliver to Puget Sound
- I-90 Spokane – East: Correct pavement rutting
- North- South Corridor improvements

## 52,000 Jobs Rely on Freight

|                          | Jobs   | Average Wage |
|--------------------------|--------|--------------|
| Agriculture              | 1,768  | \$19,413     |
| Manufacturing            | 18,035 | \$38,203     |
| Wholesale/Trade          | 11,122 | \$34,766     |
| Transportation/Utilities | 7,549  | \$37,281     |
| Construction             | 9,354  | \$32,581     |
| Military                 | 3,900  | na           |



# Vancouver: Southwest Washington Metropolitan Area

| 48,000 Jobs Rely on Freight |        |              |
|-----------------------------|--------|--------------|
|                             | Jobs   | Average Wage |
| Construction                | 11,275 | \$39,666     |
| Manufacturing               | 23,939 | \$47,679     |
| Wholesale/Trade             | 5,756  | \$41,242     |
| Transportation/Utilities    | 7,141  | \$42,229     |

## Big Transportation Issues:

- Solution to I-5 congestion – bottlenecks and constraints from Olympia to Everett
- Corridor constraints at Columbia River Bridges: I-5, I-205, and Rail
- Port of Vancouver rail yard improvements
- Columbia River channel maintenance, deepening, and barge access



Clark County (372,300 population) functions as one regional economy with Portland (1.92 million population).

Vancouver and Portland are connected by two bridges over the Columbia River, while comparable cities such as Kansas City (pop. 1.78 mil) has 10 bridges and Cincinnati (pop. 1.65 mil) has seven river bridges.

# Northwest Washington: Manufacturing Center and Border Region

## Freight System Views:

Seventy-one percent of NW Washington manufacturers are very satisfied with current freight system performance.

## What is the Freight Users' Goal?

On-time: 50%

Price: 31%

## Big Transportation Issues:

- Solution to I-5 congestion from Olympia to Everett delaying air freight to Sea-Tac, containers to Ports of Seattle and Tacoma, and fast truck service to California markets
- Border delays - Consolidate federal databases regulating freight transport
- All weather local roads

## 31,000 Jobs Rely on Freight

|                          | Jobs   | Average Wage |
|--------------------------|--------|--------------|
| Construction             | 7,985  | \$39,556     |
| Manufacturing            | 14,353 | \$39,428     |
| Wholesale/Trade          | 4,268  | \$33,969     |
| Transportation/Utilities | 4,551  | \$34,004     |

# Coastal Counties: Forestry and Manufacturing

- The forest industry in Washington is the second largest in the nation, behind Oregon, with 10 percent of all U.S. forestry employment.
- Over 90 percent of Pacific and Grays Harbor Counties are in forest land.

## **Goods Shipped To Coast**

- \$3.73 billion total products were shipped in 200,000 truckloads from the I-5 corridor to Aberdeen and Hoquiam via Highways 12, 8, and 101 in 2003.
- \$852 million, 23 percent, was machinery and \$413 million, 11 percent, was wood/paper products.

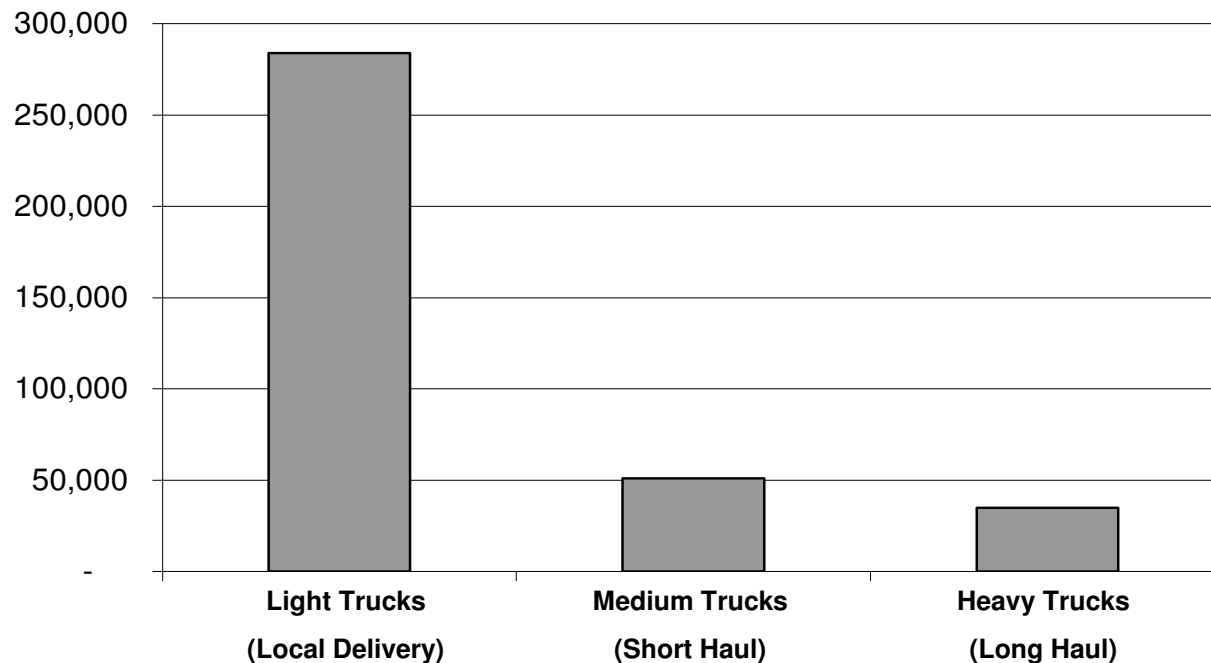
## **Goods Shipped From Coast to I-5**

- \$2.95 billion total products were shipped in 170,000 truckloads on Highways 12, 8, and 101 to I-5 corridor in 2003.
- \$1.06 billion, thirty-six percent, were logs, wood and paper products. \$840 million, 28 percent, was machinery.

### III. Delivering Goods To You

#### Washington's Retail and Wholesale Distribution System

- Up to 80% of truck trips operate in the local distribution system.
- In 2004, almost ten times more light and medium trucks than heavy trucks were licensed in Washington State.



# **Enormous Variety of Goods and Services are Handled in this Freight System**

- Food and groceries
- Fuel
- Pharmaceuticals and medical supplies
- Retail stock, from furniture and appliances to clothing and books
- Cash and negotiable instruments (armored trucks)
- Office supplies and documents
- Trash and garbage (garbage trucks)
- Moving vans
- Construction materials and equipment

# **Freight Distribution System Serves Retail, Wholesale, and Business Services Sectors**

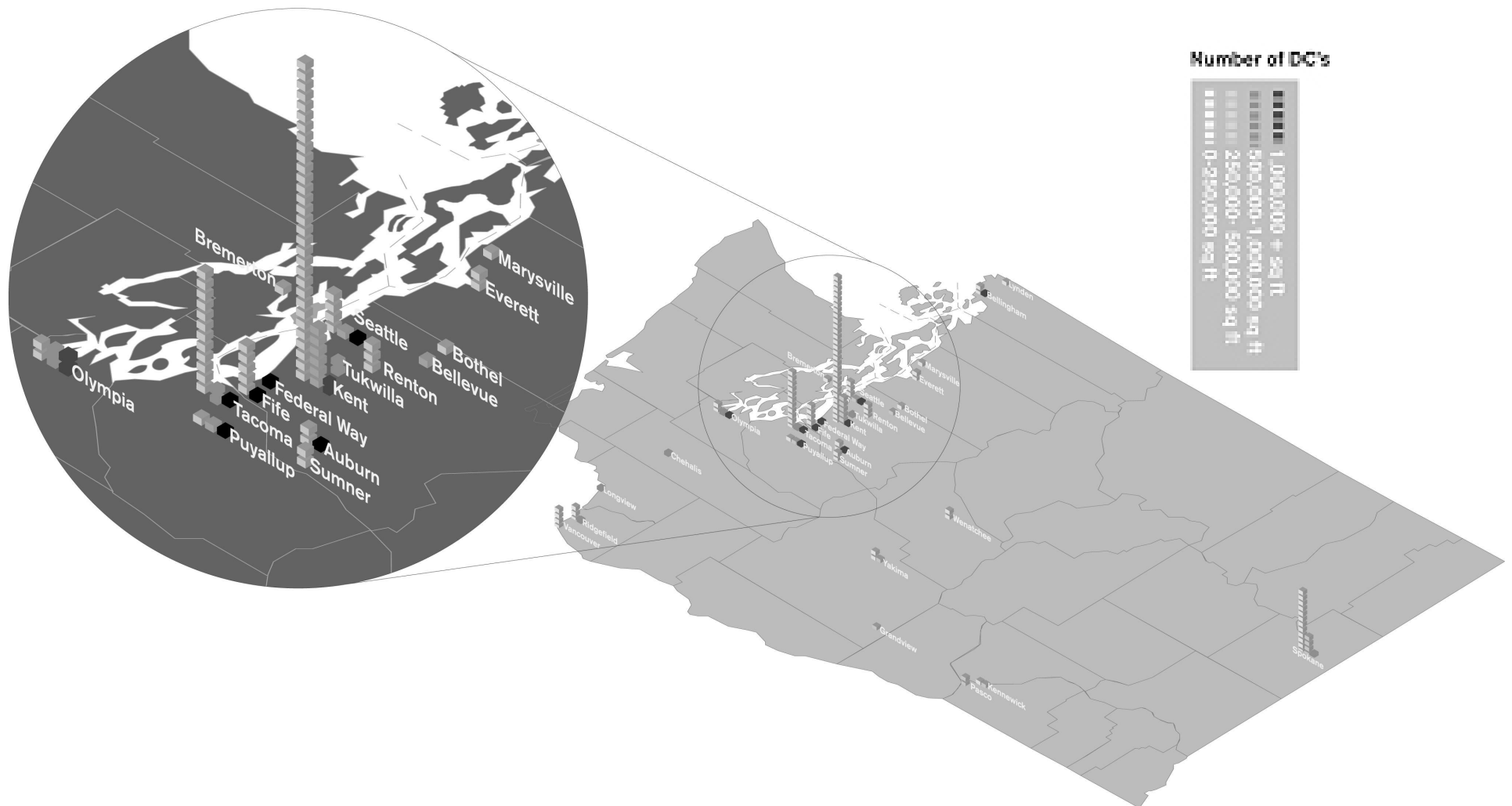
1.7 million jobs and \$240.3 billion in gross business revenues in Washington's retail, wholesale, and business services sectors in 2003.

Distribution companies must provide fast and ubiquitous service that is reliable under all conditions to support the service sectors.

- FedEx and UPS drivers don't go home until every package is delivered.
- Hospital patients can't wait for drug deliveries.

Washington's modern service economy depends on speed of delivery through the freight system.

# Distribution Centers Cluster Close to Major Markets And Freeways





# **Food and Grocery Delivery Supports Every Citizen, Everyday**

- **Big volume of truck trips serve groceries and restaurants**
- **A typical large grocery store**  
Receives two large semi-tractor trailer deliveries per day, and ten to 20 other specialized deliveries per day
- **Specialty markets such as Metropolitan Market on Seattle's Queen Anne Hill**  
Receives 375 van and small truck deliveries per week

# Fuel Distribution System

- Washington has five refineries; four of them linked by Olympic Pipe Line. Yellowstone and Chevron pipelines serve Eastern Washington from out-of-state refineries.
- Almost all deliveries to market are made by truck to distribution centers located at:**
  - Harbor Island      Tacoma      Moses Lake
  - Renton      Anacortes      Pasco
  - Tukwila      Ferndale      Spokane
- Washington has 2,800 gas stations, up 43% from 1996. One to fifteen tanker deliveries per week go to each gas station.
- Marine fueling: average fishing boat takes four tanker trucks (30,000 gallons)
- Agriculture and industry
- Home heating oil



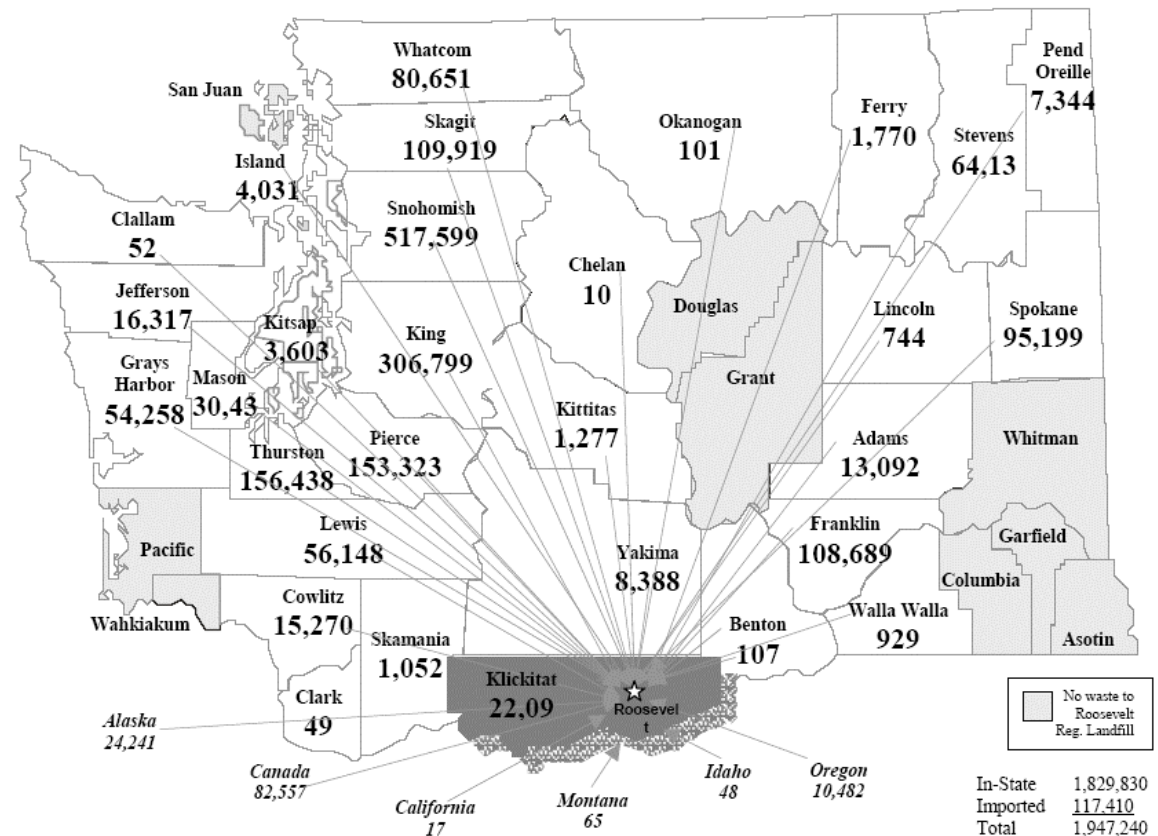
# The Garbage and Refuse System

Over 4.5 million tons of garbage moved by truck and truck/rail to landfills in Washington State in 2001.

This waste was trucked to transfer stations, consolidated, loaded into larger trucks, and moved to nearby landfills via truck or transferred to rail cars destined for Roosevelt landfill in Eastern Washington.

In 2002, 1.4 million tons of Washington's solid waste was exported to Oregon by rail.

Municipal Waste to Roosevelt Regional Landfill in 2002



# Moving Freight

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To the degree possible, streamline laws and regulations impacting freight transportation to allow ease of compliance and coordinated administration among jurisdictions.

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- Intermodal connections can be particularly important in selecting candidates for freight investment (e.g., sea-rail; truck-rail; air carrier-delivery service).
- New technologies to be applied to improve freight transportation system performance are as important as in any other mode.

# **What are the Emerging Washington Transportation Plan Freight Recommendations?**

The WTP Freight Report identifies several policy and strategy directions and the most productive investments Washington State can make to generate economic prosperity and wealth for citizens of the state.

These improvements are necessary to support Washington's role as a global gateway, our own state's manufacturers and agricultural growers, and the state's retail and wholesale distribution systems.

# Emerging Washington Transportation Plan

## Freight Recommendations (WTP “To Do” List)

| <b>Moving Freight</b>  | <b><u>Global Gateways</u></b><br><i>International and<br/>National Trade Flows<br/>through Washington</i> | <b><u>Made in<br/>Washington</u></b><br><i>Regional Economies<br/>Rely on the Freight<br/>System</i> | <b><u>Delivering Goods</u></b><br><i>The Retail and<br/>Wholesale<br/>Distribution System</i> |
|--|---|--|---|
| Reduce severe weather closures on major east/west freight corridors<br>(Improve I-90 at Snoqualmie Pass) | ✓   | ✓  | ✓   |
| Develop a statewide core all-weather county road system  |   | ✓  |   |
| Complete the statewide CVISN/Weigh-In-Motion system  | ✓   | ✓  | ✓   |
| Address freight constraints on mainline rail   | ✓   | ✓  |   |
| Create fuel pipeline capacity and distribution alternatives  |   |  | ✓   |
| Maintain the Columbia-Snake River trade corridor   | ✓   | ✓  |   |
| Create ongoing funding for regional economic development & freight<br>system mitigation                  | ✓   | ✓  | ✓   |
| Address freight constraints in the I-5 corridor  | ✓   | ✓  | ✓   |
| Study the state’s air cargo system   | ✓   | ✓  | ✓   |

# Moving Freight

## Reduce Severe Weather Closure on Major East/West Freight Corridors (Improve I-90 at Snoqualmie Pass)

### What is the Problem?

Snoqualmie Pass on I-90 is subject to unpredictable and lengthy closures. Avalanches caused 67 to 76 percent of all closures in the decade's last three severe weather years: 1996, 1998, 2001.

Eastern Washington manufacturers, agricultural growers and processors, and distributors use I-90 as the primary east-west freight route, and cite severe winter weather closures on I-90 at Snoqualmie Pass as their top freight issue.

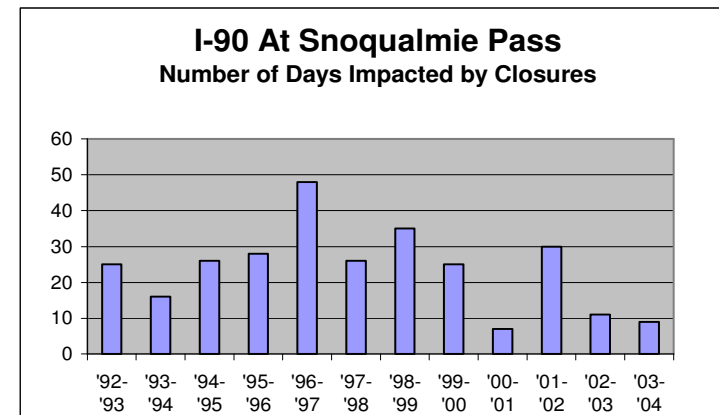
The unreliability of this freight route has significant negative impacts on Eastern Washington's economy. For example: Providence Health Care System maintains an additional five percent inventory of medicines to ensure needed supplies.

Dairy farmers in Central Washington deliver to Central Puget Sound market and have no farm storage capacity; pass closures cause them to dump product.

Substandard highway curves and poor sight distance contribute to a higher incident of truck accidents than other segments of I-90.

Super-load closures occur about 25 times per year, up to one hour in duration. To match permitted oversize moves on Snoqualmie Pass to oversize move times allowed in Puget Sound, trucks are delayed up to 17 hours M-TH and up to 44 hours on weekends.

| Type of Proposal   |                           |
|--|---------------------------|
| <input type="checkbox"/>   | Policy                    |
| <input type="checkbox"/>   | Strategy                  |
| <input checked="" type="checkbox"/>                                  | Capital                   |
| <input type="checkbox"/>   | Operating                 |
| Expected Benefits  |                           |
| <input checked="" type="checkbox"/>                                  | Preservation              |
| <input checked="" type="checkbox"/>                                  | Safety                    |
| <input type="checkbox"/>   | Transportation Access     |
| <input type="checkbox"/>   | System Efficiencies       |
| <input type="checkbox"/>   | Future Visions            |
| <input checked="" type="checkbox"/>                                  | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/>                                  | Moving Freight            |
| <input checked="" type="checkbox"/>                                  | Economy                   |
| <input type="checkbox"/>   | Health & Environment      |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |                           |
| <input type="checkbox"/>   | All                       |
| <input checked="" type="checkbox"/>                                  | Part                      |
| <input type="checkbox"/>   | None                      |
| Funded in Current Law Budget   |                           |
| <input type="checkbox"/>   | All                       |
| <input checked="" type="checkbox"/>                                  | Part                      |
| <input type="checkbox"/>   | None                      |
| <input checked="" type="checkbox"/>                                  | Global Gateways           |
| <input checked="" type="checkbox"/>                                  | Made in WA                |
| <input checked="" type="checkbox"/>                                  | Delivering Goods          |



# Moving Freight

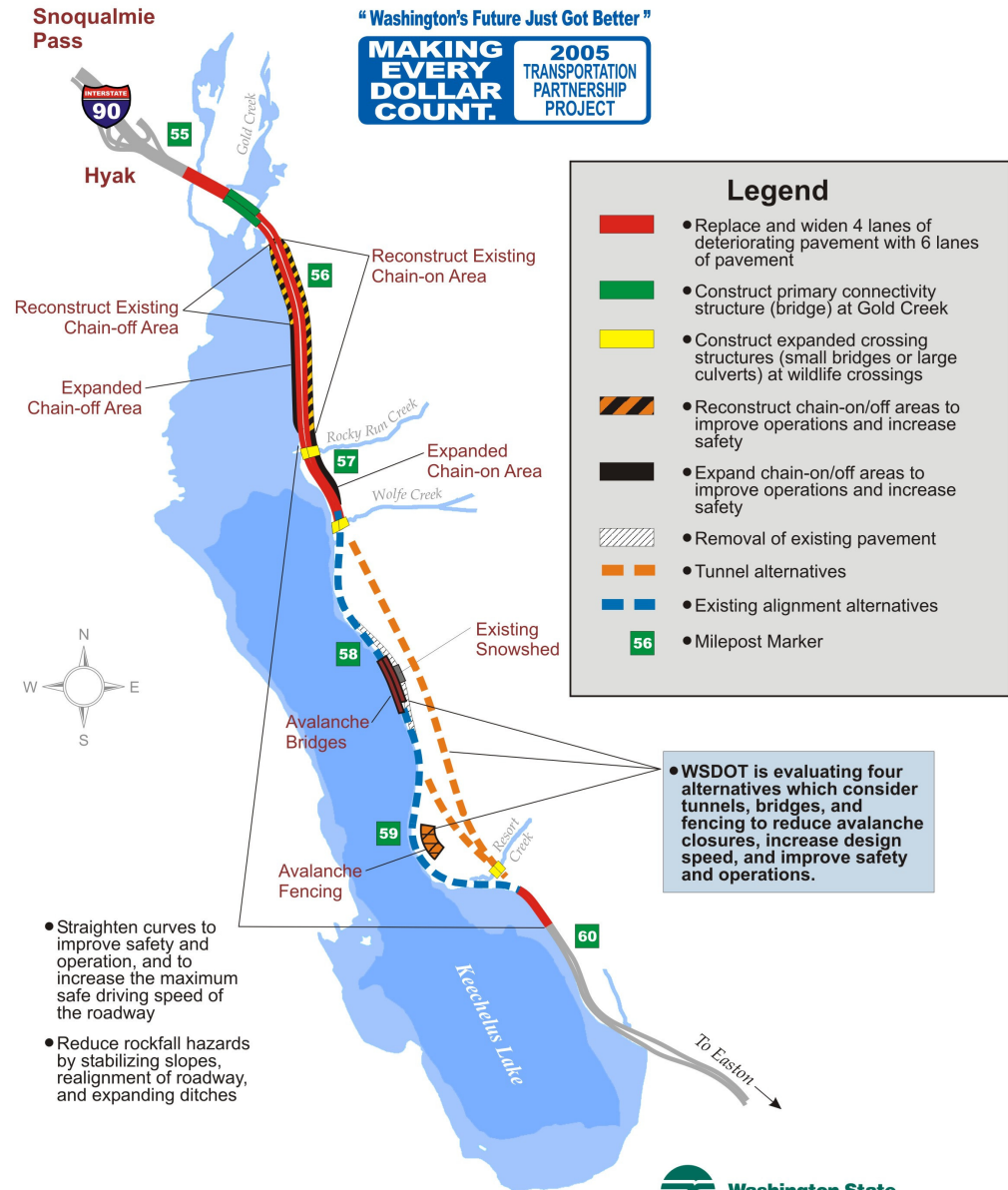
## Description of Proposal

### Full Project

Improve Interstate 90, east of and over Snoqualmie Pass, to prevent severe weather closures.



## I-90 Snoqualmie Pass East Hyak to Keeclus Dam





# Moving Freight

Reduce Severe Weather Closure on Major East/ West Freight Corridors

(Improve I-90 at Snoqualmie Pass)

## **Description of Benefits/Impacts of Implementing the proposal**

- Additional truck chain-up capacity. Current 6,000 feet area will be increased to 7,000 feet. At full capacity utilization, the number of trucks able to chain-up will increase from 203 to 237 trucks per hour.
- Additional truck chain-off capacity. Current 1,200 feet area will be increased to 3,000 feet.
- Straightening of substandard roadway curves to improve safety, sight distance, drivability, and increase the maximum safe speed of the roadway.
- Eliminate road closures due to avalanches.
- Eliminate all closures for oversize loads, avoiding untimely delays.

# **Moving Freight**

Reduce Severe Weather Closure on Major East/ West Freight Corridors

(Improve I-90 at Snoqualmie Pass)

## **Description of Benefits/Impacts of Implementing the proposal**

- Widen the highway from four to six lanes to improve traffic flow and provide capacity for future growth. The project widens 4.8 miles of I-90 from Hyak to Keechelus Dam.
- Replace deteriorating pavement for a smoother, more reliable ride.
- Increase the size and number of wildlife crossing structures and habitat connections throughout the corridor to reduce wildlife – motor vehicle incidents.
- Reduce rockfall hazards by stabilizing slopes, and expanding ditches.

# Moving Freight

## Develop a Statewide Core All-Weather County Road System

### What is the Problem?

Up to two months per year, Washington State agricultural growers and processors, manufacturers and timber/lumber businesses can't ship their products to market due to weight restrictions on county roads.

In a global marketplace, Washington producers inability to meet buyers' requirements causes loss of customers, and ultimately, loss of the state's competitive advantage.

### Description of Proposal

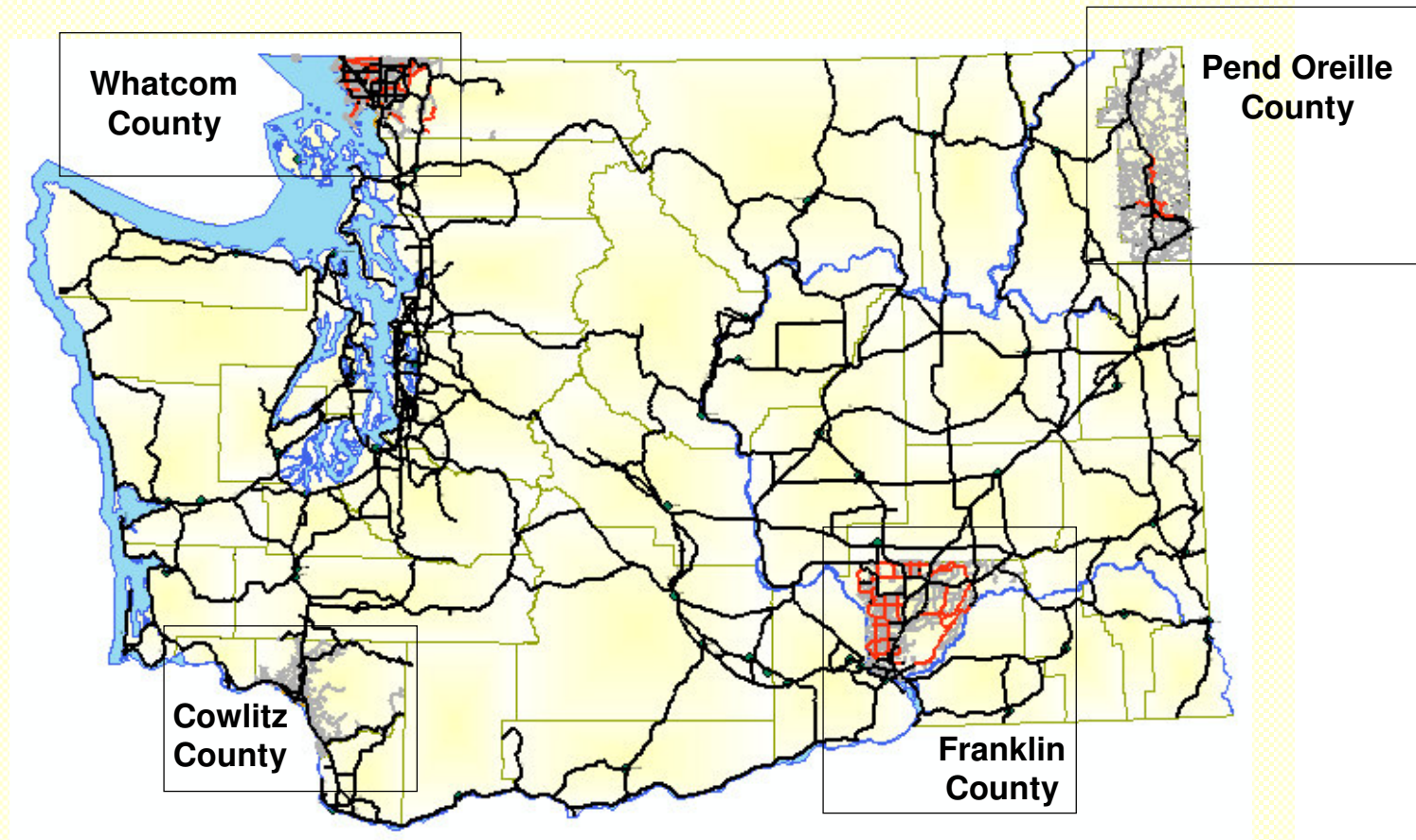
Identify, establish and fund a statewide core all-weather county road system to minimize the economic impacts of freeze and thaw-related road closures.

| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input checked="" type="checkbox"/>  | Strategy   |
| <input checked="" type="checkbox"/>  | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input checked="" type="checkbox"/>  | Preservation   |
| <input type="checkbox"/>   | Safety   |
| <input type="checkbox"/>   | Transportation Access  |
| <input checked="" type="checkbox"/>  | System Efficiencies  |
| <input type="checkbox"/>   | Future Visions   |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>  | Moving Freight   |
| <input checked="" type="checkbox"/>  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in<br>'05 – '07 Commission<br>Funding Recommendation? |  |
| <input type="checkbox"/> All   | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |
| Funded in Current Law Budget   |  |
| <input type="checkbox"/> All   | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |
| <input type="checkbox"/>   | Global Gateways  |
| <input checked="" type="checkbox"/>  | Made in WA   |
| <input type="checkbox"/>   | Delivering Goods   |

# Moving Freight

Develop a Statewide Core All-Weather County Road System

## Four-County Pilot Information Project

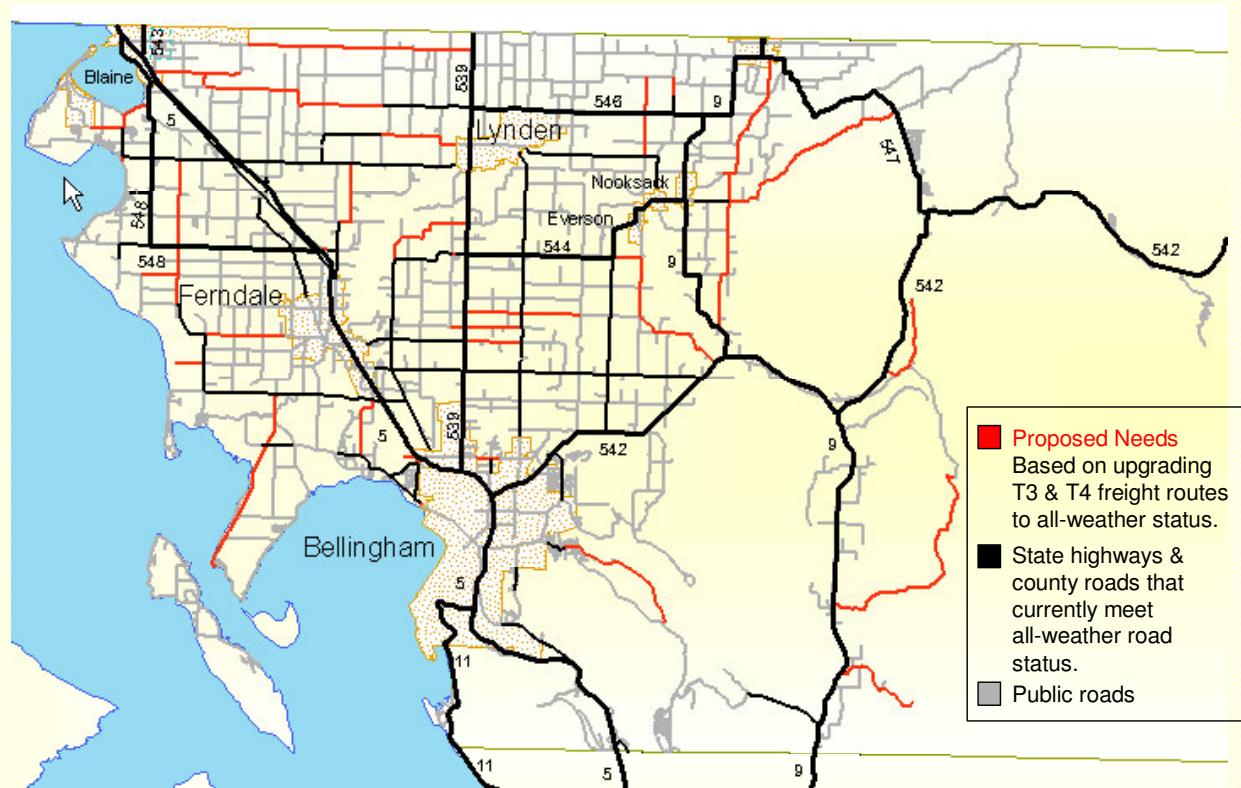


# Moving Freight

## Develop a Statewide Core All-Weather County Road System

### Description of Benefits/Impacts of Implementing the Proposal

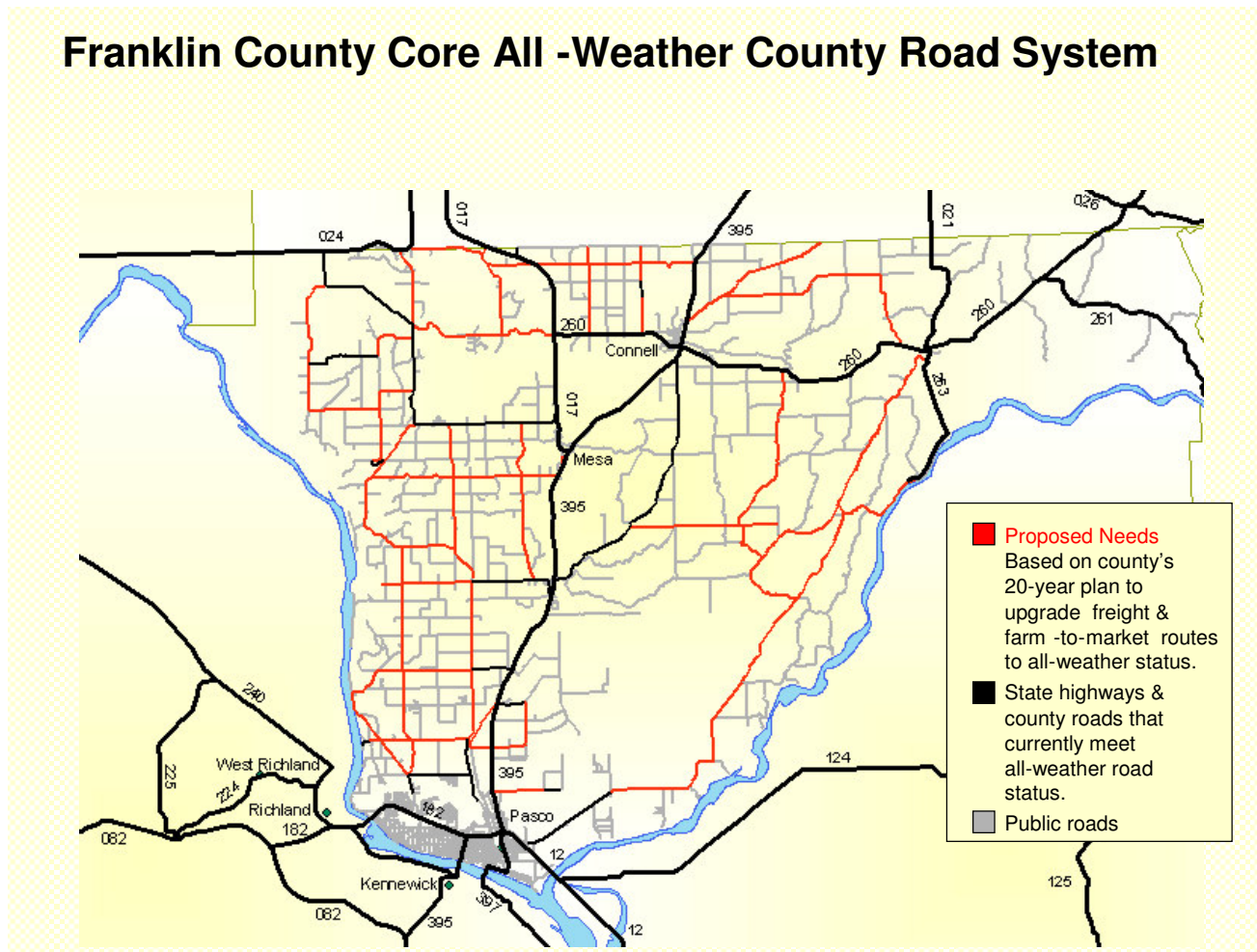
#### Whatcom County Core All-Weather County Road System



# Moving Freight

## Develop a Statewide Core All-Weather County Road System

### Description of Benefits/Impacts of Implementing the Proposal

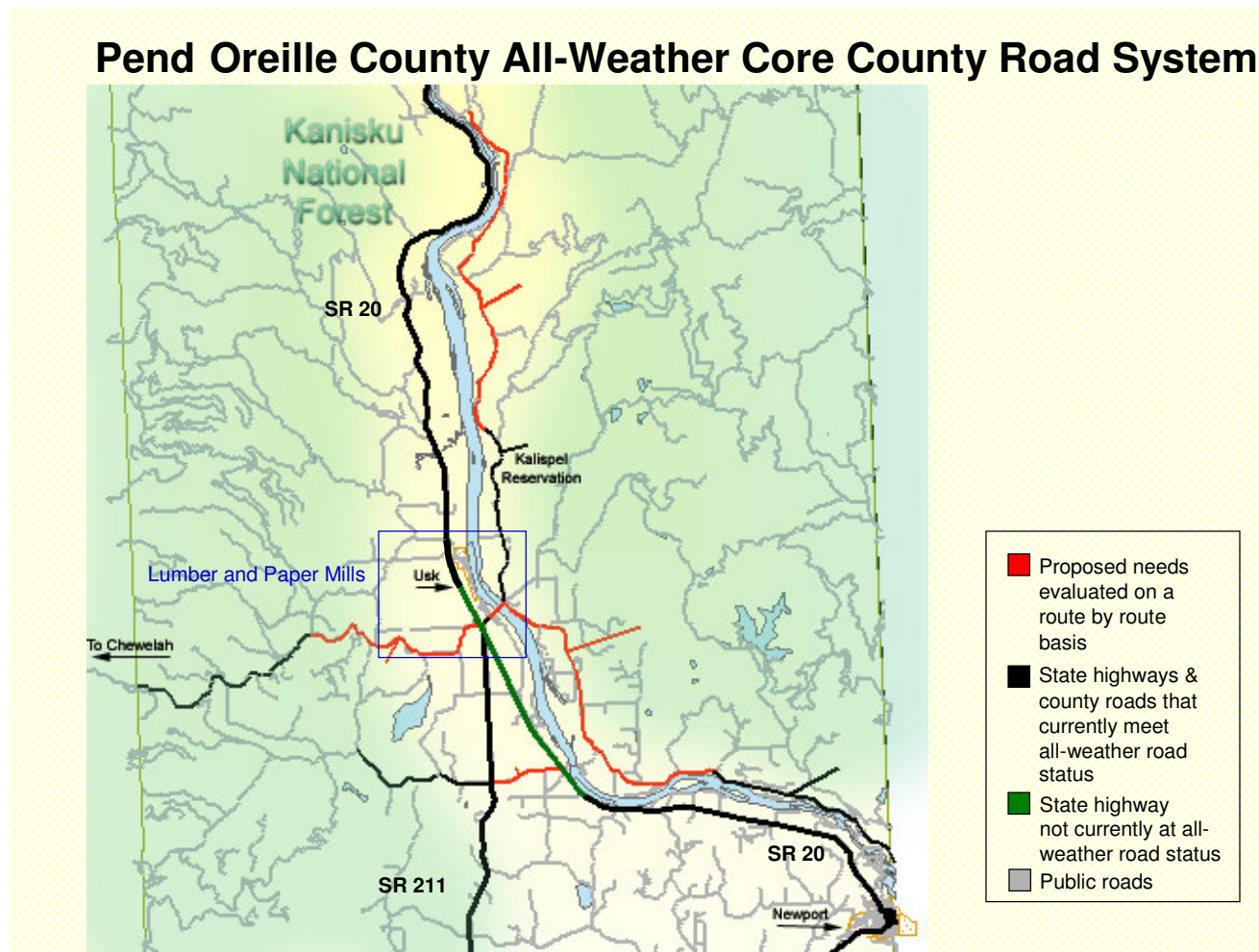




# Moving Freight

## Develop a Statewide Core All-Weather County Road System

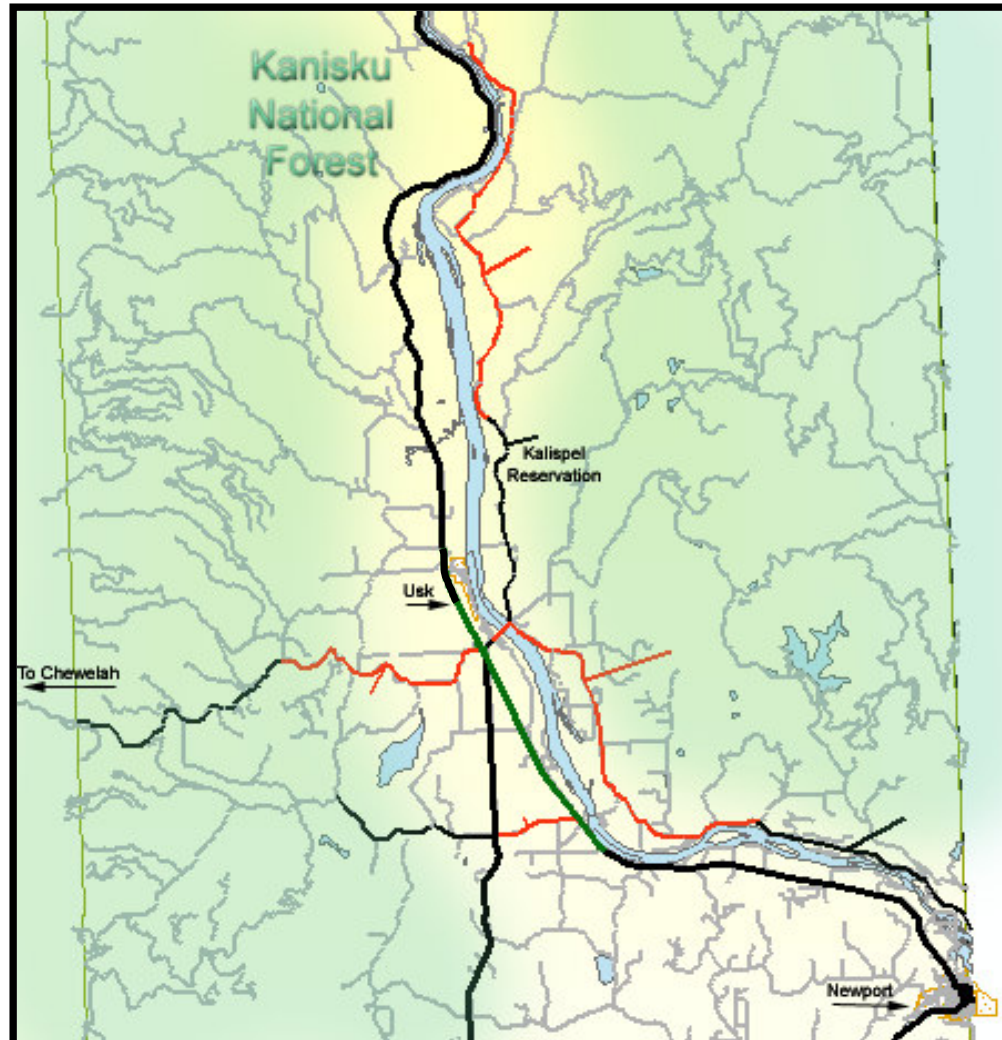
### Description of Benefits/Impacts of Implementing the Proposal



# Moving Freight

## Develop a Statewide Core All-Weather County Road System

### Description of Benefits/Impacts of Implementing the Proposal



#### Northeastern Washington Example: Chewelah to Usk Route on Flowery Trail

Completing this core all-weather route will connect a paper mill, a log mill, and regional agri-businesses to the state highway system.

Much of this route has been built to year-round road standards, but the 6.3-mile segment from Danforth Rd to Hwy 20 at Kings Lake Rd is weight-restricted.

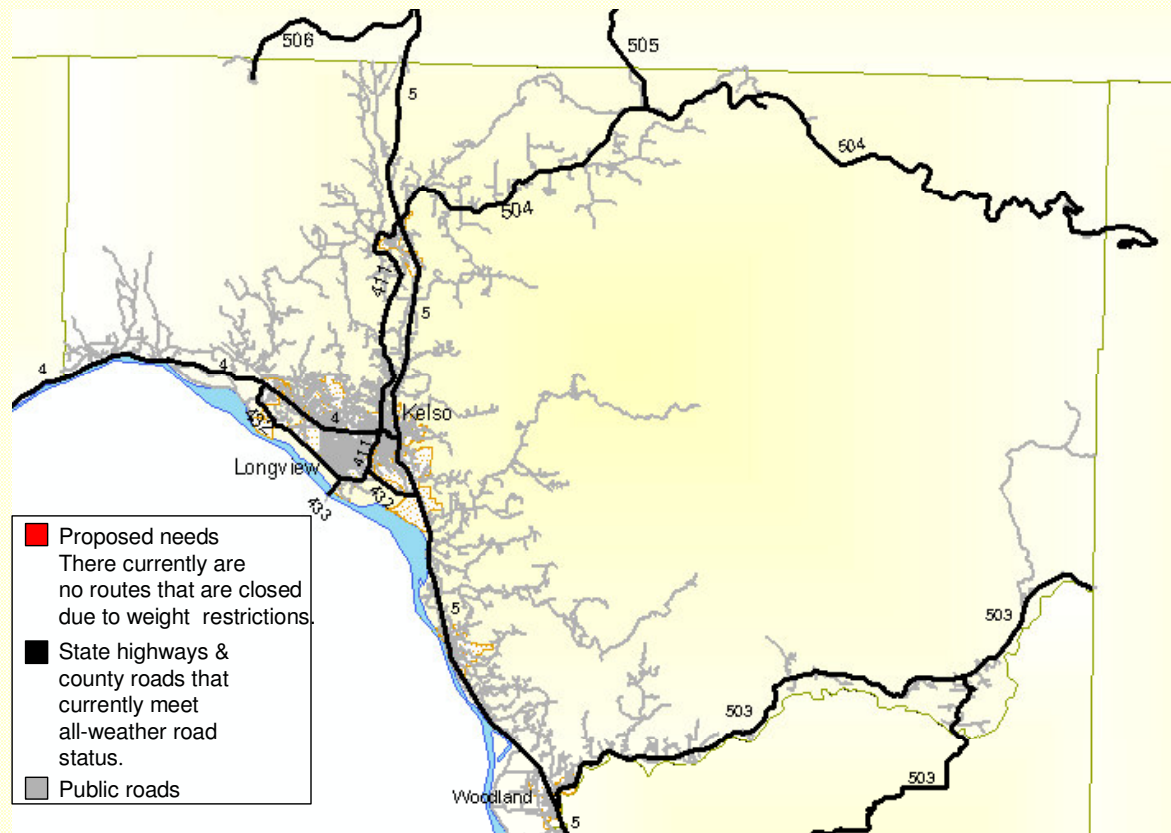


# Moving Freight

## Develop a Statewide Core All-Weather County Road System

### Description of Benefits/Impacts of Implementing the Proposal

#### Cowlitz County Core All-Weather County Road System



# Moving Freight

## Complete the Statewide CVISN/ Weigh-in-Motion System

### What is the Problem?

Truck scales are used to protect state highways from overweight vehicles, and provide safety inspections and freight data, while minimizing delay to trucks.

Safe and legal carriers need to move products with the least amount of interruption.

In Washington, trucks without transponders spend an average of 6.13 minutes at scales for weight verification (inspections can take much longer).

Much of the state's weigh station infrastructure is aging. Fourteen of 15 weigh stations were built over 20 years ago, and none can handle the current volume of truck traffic. There are currently only eight CVISN/ Weigh-In-Motion stations operating in Washington.

| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input type="checkbox"/>   | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input checked="" type="checkbox"/>                                  | Operating  |
| Expected Benefits  |  |
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| <input checked="" type="checkbox"/>                                  | Safety   |
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| <input checked="" type="checkbox"/>                                  | System Efficiencies  |
| <input checked="" type="checkbox"/>                                  | Future Visions   |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input type="checkbox"/>   | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
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| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| <input checked="" type="checkbox"/>                                  | Global Gateways  |
| <input checked="" type="checkbox"/>                                  | Made in WA   |
| <input checked="" type="checkbox"/>                                  | Delivering Goods   |

# Moving Freight

## Complete the Statewide CVISN/ Weigh-In-Motion System

### Description of Proposal

Complete the statewide Commercial Vehicle Information Systems and Networks (CVISN) and Weigh-in-Motion (WIM) system.

Eight CVISN Sites Deployed, Seven More Planned



# Moving Freight

## Complete the Statewide CVISN/ Weigh-In-Motion System

### Description of Benefits/Impacts of Implementing the Proposal

- Electronically checks commercial vehicles for safety, size, weight, and credentials, and allows safe and legal trucks to bypass scales while maintaining freeway speeds.
- Reduces blocked travel lanes and merging hazards.
- Eliminates truck idling and improves air quality.

|               | <i>Bypass Events</i> | <i>Dollars Saved</i>  | <i>Hours Saved</i> |
|---------------|----------------------|-----------------------|--------------------|
| CVISN and WIM | 0.5 million          | \$3.1 million         | 52, 000            |
| WIM only      | 1.5 million          | \$9.5 million         | 158,000            |
| <b>Total</b>  | <b>2.1 million</b>   | <b>\$12.6 million</b> | <b>210,000</b>     |

\*Savings calculated based on 6.13 minutes saved per bypass event and a \$1 per minute cost of idling trucks; *July 1, 2002 to June 30, 2003*

# Moving Freight

## Address Freight Constraints on Mainline Rail

### What is the Problem?

Container freight entering the Ports of Seattle and Tacoma will triple by 2025. Most of these goods are shipped to the Midwest via rail, but there isn't enough east-west rail capacity to handle a tripling of current volume.

**Comparison of Mainline Rail Capacity With Current and Projected Operations (Trains per Day)**

| Mainline Segment   | Current Operations         |                 |                 | Projected 2025 Operations  |                 |                 |
|--------------------|----------------------------|-----------------|-----------------|----------------------------|-----------------|-----------------|
|                    | Estimated Sustainable Cap. | Ave. Trains/Day | Peak Trains/Day | Estimated Sustainable Cap. | Ave. Trains/Day | Peak Trains/Day |
| Stevens Pass       | 28                         | 23              | 25              | 28                         | 46              | 51              |
| Stampede Pass      | 20                         | 6               | 7               | 20                         | 16              | 18              |
| Blaine to Everett  | 18                         | 14              | 15              | 30                         | 21              | 23              |
| Everett to Seattle | 50                         | 45              | 50              | 100                        | 84              | 92              |
| Seattle to Tacoma  | 100                        | 85              | 94              | 200                        | 189             | 208             |
| Tacoma to Kalama   | 60                         | 45              | 50              | 120                        | 80              | 88              |
| Kalama to Longview | 80                         | 52              | 57              | 160                        | 94              | 103             |

BST Associates. 2004 Marine Cargo Forecast: Original source: MainLine Management and HDR, Inc. (Page 115). Includes passenger trains.

| Type of Proposal   |                           |
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| Expected Benefits  |                           |
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| <input type="checkbox"/>   | Future Visions            |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/>                                  | Moving Freight            |
| <input type="checkbox"/>   | Economy                   |
| <input type="checkbox"/>   | Health & Environment      |
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| Funded in Current Law Budget   |                           |
| <input type="checkbox"/>   | All                       |
| <input checked="" type="checkbox"/>                                  | Part                      |
| <input type="checkbox"/>   | None                      |
| <input checked="" type="checkbox"/>                                  | Global Gateways           |
| <input checked="" type="checkbox"/>                                  | Made in WA                |
| <input type="checkbox"/>   | Delivering Goods          |

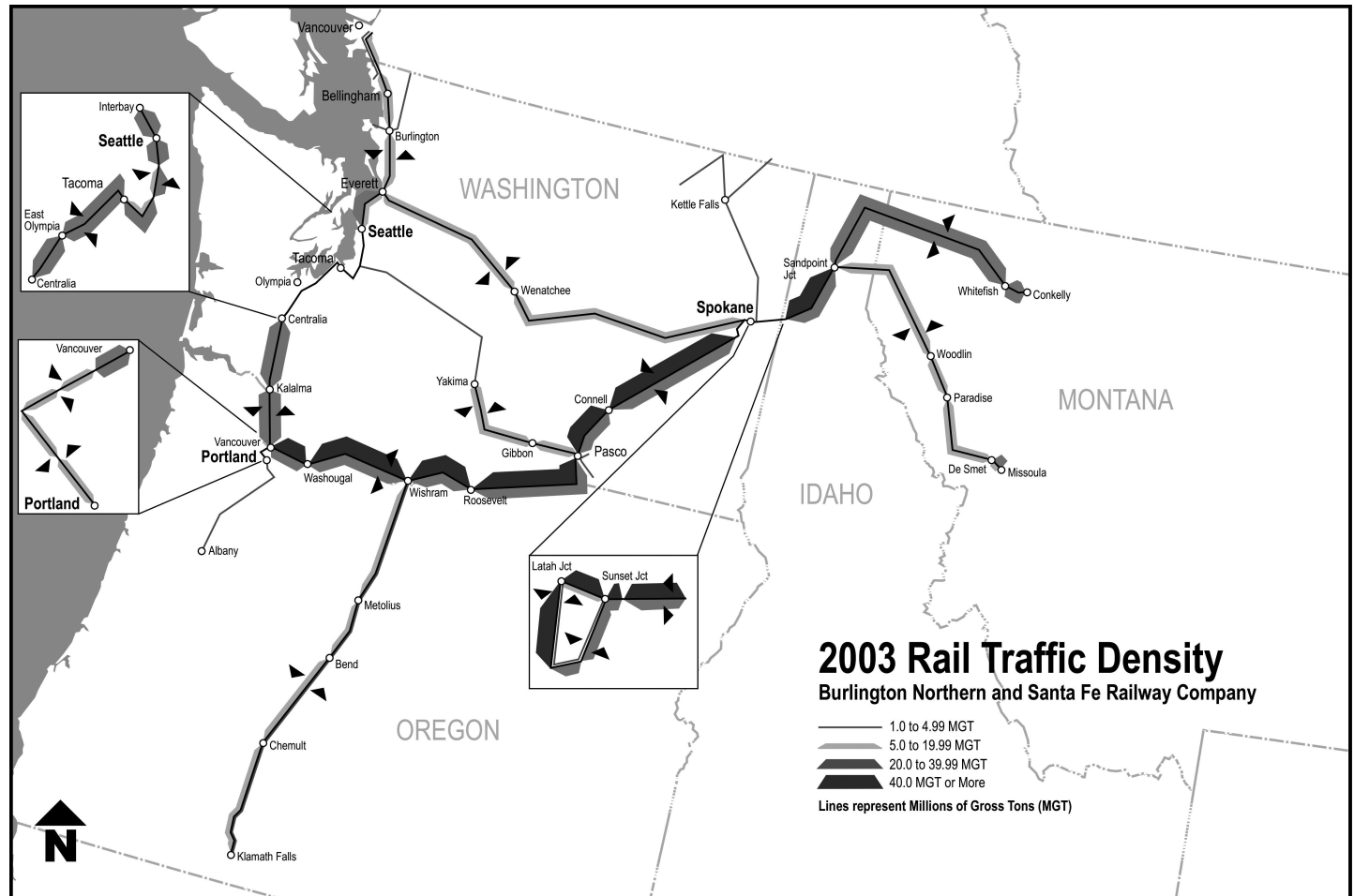
National defense depends on the United States' ability to rapidly project force. Fort Lewis is the Power Projection Platform on the West Coast. In a major conflict, equipment and supplies will attempt to surge through east-west railroad lines - approaching capacity limits - to reach cargo ships at the Ports of Tacoma, Olympia and Seattle.

# Moving Freight

## Address Freight Constraints on Mainline Rail

Eighty-five percent of Eastern Washington wheat is shipped to Asia via Columbia River ports, but farmers struggle to get product through the state's freight system.

The Port of Vancouver rail yard is severely congested, slowing wheat exports and creating a bottleneck in the Pacific Northwest's entire east-west rail system.



# Moving Freight

## Address Freight Constraints on Mainline Rail

### Description of Proposals

I. Policy: Support growth in east-west mainline rail capacity and port-rail connections, and preserve rail yards in metro areas.

Strategy: Support the BNSF Railway Company's (in track miles and volume the state's largest railroad) preliminary plan to:

- Add siding capacity along the Columbia River Gorge
- Enlarge Stampede Pass to accommodate double-stacked trains
- Complete the Swift siding improvement at the Canadian border
- Complete the Vancouver rail project



II. Policy: Review the relationship between freight and passenger rail service on the Interstate-5 rail corridor, and ensure that growth of passenger rail does not encumber freight service.

Strategy: Study the impact of projected growth in freight and passenger rail services on capacity in the I-5 rail corridor.

# Moving Freight

## Address Freight Constraints on Mainline Rail

### Description of Benefits/Impacts of Implementing the Proposals

#### New WTP Rail Proposals:

- Adding up to seven sidings along the Columbia River Gorge will incrementally increase BNSF's capacity to handle import-export growth.
- Enlarging Stampede Pass to accommodate double-stacked trains, with associated track, signal, exhaust flushing and snow shed improvements, will add capacity to the rail system for container traffic.
- Completing the Swift siding improvement at the Canadian border will improve border congestion, passenger-freight interface, and address Customs and security issues. Related infrastructure improvements at Colebrook B.C. would deliver additional capacity gains.

#### Projects Underway:

- Completing the Vancouver rail project will improve south to east-west to north operations by constructing a bypass around the freight yard and a grade separation at 39<sup>th</sup> Street. (Funded in 2003 legislative package.)
- FAST I and II projects will eliminate at-grade crossings and improve safety.



# Moving Freight

## Address Freight Constraints on Mainline Rail

### Description of Benefits/Impacts of Implementing the Proposals

#### Additional Projects For WTP Consideration:

- Implementing full scale Tacoma-Black River co-production would require major infrastructure improvements and joint operating agreements to maximize main line capacity between BNSF and UP. Limited co-production is possible with a lower level of investment.
- To add rail capacity to Port of Tacoma container growth:
  - Add north wye connection and second bridge at Bullfrog Junction in Tacoma
  - Reconfiguration of existing tracks, additional siding track at Auburn Yard
- Add alternate interchange routes – upgraded rail and new connections - for the Puget Sound and Pacific Railroad Company (PSAP) and Tacoma Rail shortlines, from BNSF and UP to the Port of Grays Harbor, to improve port capacity and reduce congestion in and around Centralia rail lines. This would move PSAP trains away from the Centralia BNSF yard, and reduce mainline congestion.

# Moving Freight

## Create Fuel Pipeline Capacity and Distribution Alternatives

### What's the Problem?

Washington's citizens and industries consume 17.6 million gallons of petroleum per day and consumption is growing.

Olympic Pipe Line, currently operating at close to 100 percent capacity, has no plans to add pipeline capacity.

Olympic Pipe Line carries 50 to 60 percent of the output of Washington refineries to distribution centers, and is the source of all jet fuel for Sea-Tac Airport.

Sea-Tac Airport has limited storage capacity (four to five days fuel supply) and no alternative mode of delivery.

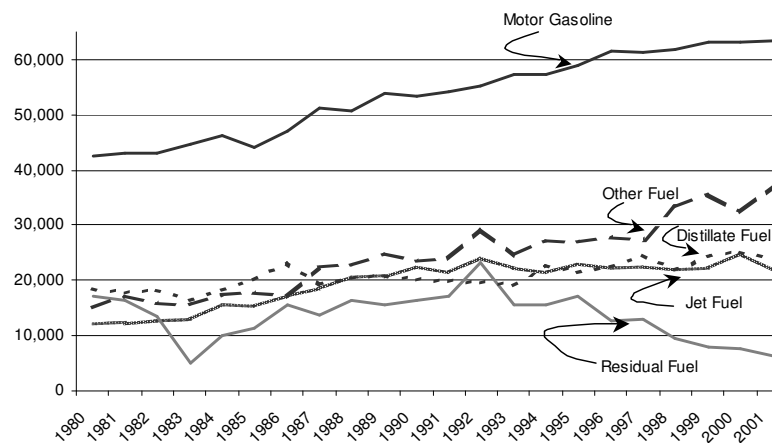
The entire West Coast is tied to Washington's fuel distribution system. Oregon has no refineries; Washington supplies 70 percent of Oregon's fuel.

Four of Washington's five existing refineries are prohibited from adding dock capacity to increase intake/outgo for tankers.

Distribution costs impact fuel pricing. In Washington, moving fuel by pipeline costs one half as much as moving fuel by barge.

Pipeline's number one safety and security issue: contractors who dig near or on top of pipelines.

**Fuel Consumption Increasing in Washington State**



| Type of Proposal   |  |
|--|--|
| <input checked="" type="checkbox"/>                                  | Policy   |
| <input checked="" type="checkbox"/>                                  | Strategy   |
| <input type="checkbox"/>   | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input type="checkbox"/>   | Preservation   |
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| <input type="checkbox"/>   | System Efficiencies  |
| <input checked="" type="checkbox"/>                                  | Future Visions   |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
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| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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# Moving Freight

## Create Fuel Pipeline Capacity and Distribution Alternatives

### Description of Proposal

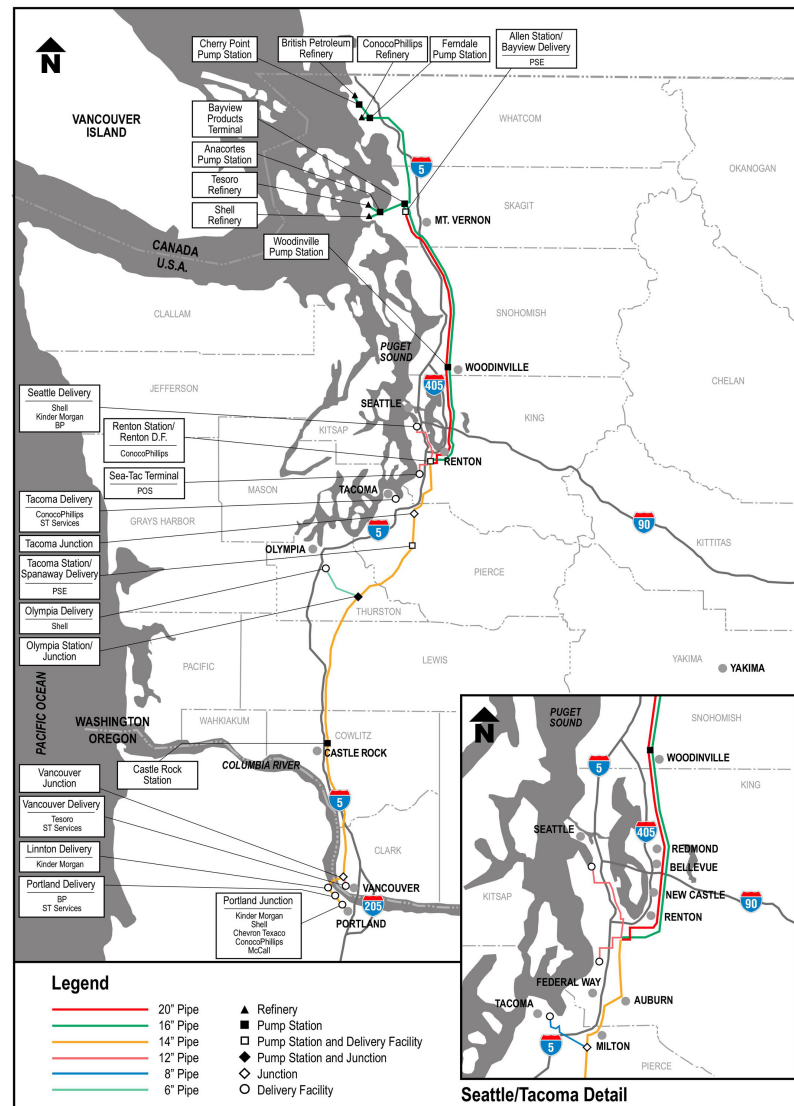
**Policy:** Create fuel pipeline capacity and distribution alternatives to meet Washington's long-term demand.

**Strategy:** Analyze constraints and remove obstructions so that the market may respond to increasing demand.

### Description of Benefits/Impacts of Implementing the Proposal

Efficiently supplying fuel to Washington citizens and businesses supports the economic vitality of our state.

### Petroleum Pipelines



# Moving Freight

## Maintain the Columbia- Snake River Trade Corridor

### What is the Problem?

#### Columbia-Snake River Freight System:

- World's second largest grain export system.
- United State's largest wheat export system.
- Carries 40 percent of all U.S. wheat exports and over 60 percent of Eastern Washington wheat.
- Lower Columbia River grain exports to double by 2025.

#### Delayed Maintenance:

- 20-year Dredge Management Plan and permit are delayed. Maintenance is the responsibility of the federal government and requires annual appropriations.
- Federally authorized 14-foot Snake River navigation channel not maintained since 1998; threatens safety of vessel operations. When water level is reduced or silt allowed to build up, barges can't carry full loads and must decrease capacity by 500 tons per barge for every one and one-half feet of river depth. The Port of Clarkston water level is now at 8.5 feet and the Port of Lewiston at 10.6 feet. Takes up to 20 percent longer to load barges, resulting in higher freight costs that impact global market demand for Washington State grain.
- Columbia River jetties are at near-breach stage; without repair may lose 30 percent of channel depth in a storm.

| Type of Proposal                    |           |
|-------------------------------------|-----------|
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| <input checked="" type="checkbox"/> | Strategy  |
| <input type="checkbox"/>            | Capital   |
| <input type="checkbox"/>            | Operating |

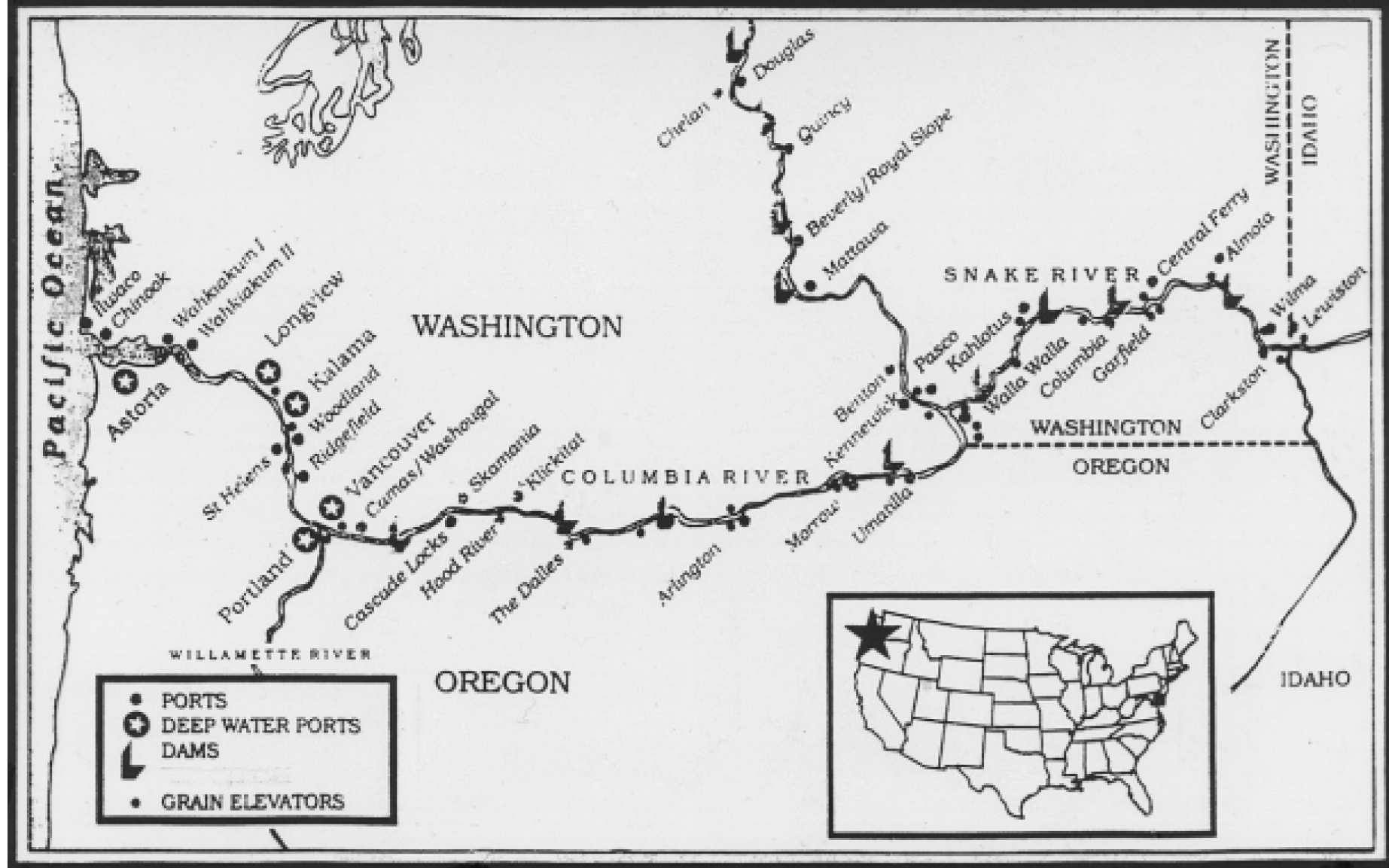
| Expected Benefits                   |                           |
|-------------------------------------|---------------------------|
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| <input type="checkbox"/>            | Safety                    |
| <input type="checkbox"/>            | Transportation Access     |
| <input type="checkbox"/>            | System Efficiencies       |
| <input checked="" type="checkbox"/> | Future Visions            |
| <input type="checkbox"/>            | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/> | Moving Freight            |
| <input checked="" type="checkbox"/> | Economy                   |
| <input checked="" type="checkbox"/> | Health & Environment      |

|  |  |
|--|--|
| All or Part Included in<br>'05 – '07 Commission<br>Funding Recommendation? |  |
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|                              |  |
|------------------------------|--|
| Funded in Current Law Budget |  |
| <input type="checkbox"/> All | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |

|                                     |                  |
|-------------------------------------|------------------|
| <input checked="" type="checkbox"/> | Global Gateways  |
| <input checked="" type="checkbox"/> | Made in WA       |
| <input type="checkbox"/>            | Delivering Goods |

# THE COLUMBIA/SNAKE RIVER SYSTEM



# Moving Freight

## Maintain the Columbia-Snake River Trade Corridor

### Description of Proposal

Maintain the Columbia-Snake River trade corridor by creating and implementing a strategic plan to dredge, maintain locks and jetties, and deepen the Columbia River channel downriver.

**Implement a 20-year Dredge Management Plan** to stabilize the Columbia-Snake River barge system.

**Columbia River Channel deepening** so downriver ports can handle larger ship sizes and maintain existing trade.

**Mid-Columbia & Snake River Lock Repair & Retrofit:** eight dams in need of near-term repair.

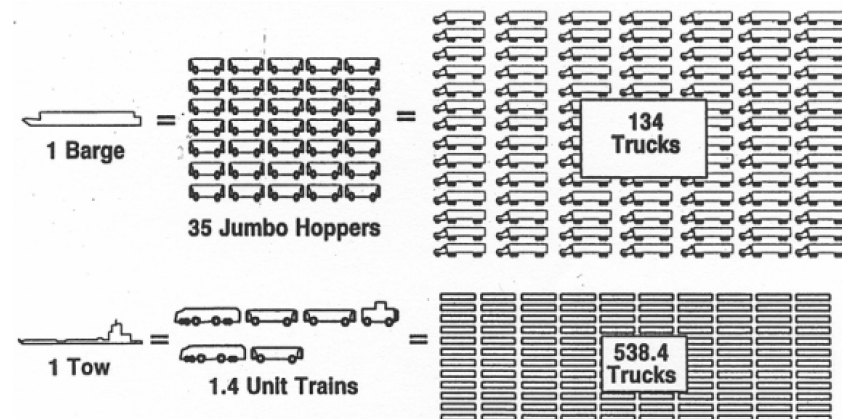
**Columbia River Jetty Repair** to keep sand from being deposited directly into the navigation channel during storms.

### Description of Benefits/Impacts of Implementing the Proposal

Provide Washington State agribusiness and U.S. grain shippers efficient access to world markets.

Maintain navigation infrastructure to accommodate increasingly larger ships and growing inland barge movements.

Barging replaces 700,000 trucks per year that would otherwise travel on the Columbia Gorge highways.



# Moving Freight

## Create Ongoing Funding for Regional Economic Development & Freight System Mitigation

### What are the Problems?

- I. Communities in Washington State lack capital to make investments in regional freight systems to develop and sustain economic growth. The state's lost opportunities include urban brown-field industrial lands that aren't redeveloped into productive sites, and rural communities that are unable to recruit new businesses. Shortline railroads that can't generate higher volumes are unable to recoup their costs of capital and may be abandoned. In addition, the state lacks incentives to help regions prioritize desired improvements.
- II. Conservative forecasts for Washington State international container traffic indicate that volumes will triple by 2025. Without regional improvements, port and intermodal access will be overwhelmed by the surge of international freight traffic.
- III. Seventy percent of containers entering Washington ship through the state via rail, so growth through Washington's Global Gateways system impacts local communities all along the mainline rail lines. Vehicle and rail traffic aren't separated at many busy grade crossings, creating safety problems and car and truck delays.
- IV. Few metro areas optimize truck movements within cities.

| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input checked="" type="checkbox"/>                                  | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input type="checkbox"/>   | Preservation   |
| <input type="checkbox"/>   | Safety   |
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| <input type="checkbox"/>   | Future Visions   |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| <input checked="" type="checkbox"/>                                  | Global Gateways  |
| <input checked="" type="checkbox"/>                                  | Made in WA   |
| <input checked="" type="checkbox"/>                                  | Delivering Goods   |

# Moving Freight

## Create Ongoing Funding for Regional Economic Development & Freight System Mitigation

### Description of Proposal

Create an ongoing, appropriate level of funding for regional economic development freight projects, port and intermodal access improvements, grade separations, shortline rail improvements, and truck route program to optimize truck movements in metro areas.

### Description of Benefits/Impacts of Implementing the Proposal

Benefits of investing in regional economic development include increased:

- Contribution to local and state tax base
- Contribution to Gross State Product
- Growth of jobs
- Economic growth distributed throughout the state

Statewide truck route program to provide incentives for congested urban areas to optimize truck movements. Eighty percent of all freight moves on the local system.

Benefits from investing in the growth in Washington's Global Gateways freight system include:

- Economic impact of jobs created by seaport, rail and warehouse district activities.
- Reduced cost of international transport for Washington State goods.
- Advantage from the region's soft trade infrastructure: human capital that facilitates financial, legal, and other international business issues.



# Moving Freight

## Create Ongoing Funding for Regional Economic Development & Freight System Mitigation Shortline Rail Viability and Capacity

### What is the Problem?

Emerging mainline railroad strategies and technologies impact local shippers by reducing the viability of branch lines and short line railroads. Rail branch lines and short line railroads that ship low volumes cannot recoup their capital costs and may be short lined or abandoned, respectively.

Without state subsidies, an increasing number of Washington State rail branch and short lines face abandonment. The state and WSDOT need new policy direction to address the changing short line rail environment.

### Description of Proposal

WSDOT's Public Transportation and Rail Division and Freight Strategy & Policy Office will facilitate policy discussions and develop a strategic plan to adapt to, or resolve, shortline viability and capacity constraints.

### Description of Benefits/Impacts of Implementing the Proposal

Clarifying the state's role regarding financial support of shortline freight rail, and developing methods to more fully assess economic impact of such investments, will focus limited resources on the most productive proposals.

| Type of Proposal   |                           |
|--|---------------------------|
| <input type="checkbox"/>   | Policy                    |
| <input checked="" type="checkbox"/>                                  | Strategy                  |
| <input type="checkbox"/>   | Capital                   |
| <input type="checkbox"/>   | Operating                 |
| Expected Benefits  |                           |
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**Washington State Rail System  
(As of March 2005)**

|                                    |                                     |
|------------------------------------|-------------------------------------|
| BLMR Blue Mountain Railroad        | POVA Pend Oreille Valley RR         |
| BNSF BNSF Railway Company          | PSAP Puget Sound & Pacific RR       |
| BT Ballard Terminal                | PVJR Portland Vancouver Junction RR |
| CBRW Columbia Basin Railroad       | RS Royal Slope RR                   |
| CLC Columbia & Cowlitz RR          | TCLTY Tin City & Olympia RR         |
| CSCD Cascade & Columbia RR         | TMRW Tacoma Rail Mountain Division  |
| CWRR Central Washington RR         | TSWIR Tappanah Simose & Western     |
| GRNW Great Northwest RR            | UP Union Pacific Railroad           |
| KFI Kettle Falls International RR  | USG United States Government        |
| MVT Mount Vernon Terminal          | (PSAP) Port of Chelan               |
| NL Naches Line                     | MS Meeker Southern                  |
| PCC Palouse River & Coulee City RR |                                     |

# Moving Freight

## Address Freight Constraints in the I-5 Corridor

### What is the Problem?

#### *Growth in the I-5 Corridor*

Manufacturers, agricultural growers and processors, construction firms, and distributors have no practical alternative to Washington's most heavily used north-south freight routes: I-5, I-405 and Highway 167.

Up to 22,000 trucks drive the I-5 corridor between Central Puget Sound and Oregon, daily. Truck trips increased by 94 percent on the I-5 corridor between 1993 and 2003. Freight volumes are expected to increase another 80 percent - to 35,000 trucks per day - by 2020.

Estimated Average Annual Daily Truck Traffic 1998



Estimated Average Annual Daily Truck Traffic 2020



| Type of Proposal   |  |
|--|--|
| <input checked="" type="checkbox"/>                                  | Policy   |
| <input checked="" type="checkbox"/>                                  | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input checked="" type="checkbox"/>                                  | Operating  |
| Expected Benefits  |  |
| <input checked="" type="checkbox"/>                                  | Preservation   |
| <input checked="" type="checkbox"/>                                  | Safety   |
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| <input checked="" type="checkbox"/>                                  | System Efficiencies  |
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| <input checked="" type="checkbox"/>                                  | Moving Freight   |
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| <input checked="" type="checkbox"/>                                  | Global Gateways  |
| <input checked="" type="checkbox"/>                                  | Made in WA   |
| <input checked="" type="checkbox"/>                                  | Delivering Goods   |

# Moving Freight

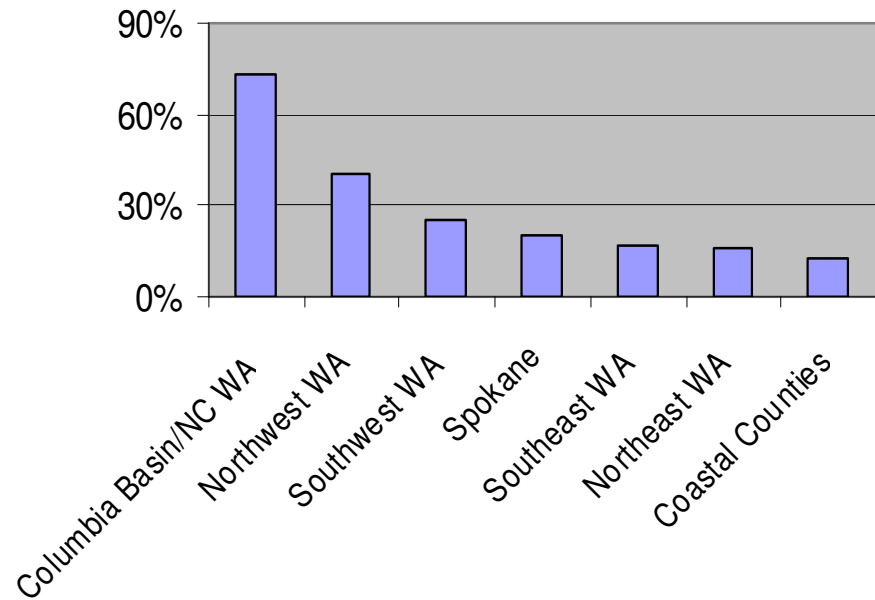
## Address Freight Constraints in the I-5 Corridor For Statewide Market Access

Every region in the state ships goods on the I-5 Corridor to the major markets in Central Puget Sound. Statewide businesses also ship products to the world through Central Puget Sound ports.

### Regional Truck Trips to Central Puget Sound\*

| Origin By Region                            | Daily Truck Trips |
|---|-------------------|
| Northwest Washington                        | 1,500             |
| Columbia Basin/<br>North Central Washington | 1,400             |
| Coastal Counties                            | 750               |
| Southwest Washington                        | 730               |
| Northeast Washington                        | 415               |
| Spokane                                     | 390               |
| Southeast Washington                        | 260               |

**Percentage of 2003 Regional Truck Trips  
Destined for Central Puget Sound**



\*Strategic Freight Transportation Analysis, Washington State University; 2003.

# Moving Freight

## Address Freight Constraints in the I-5 Corridor

### What's the Problem?

#### *Higher Business Costs*

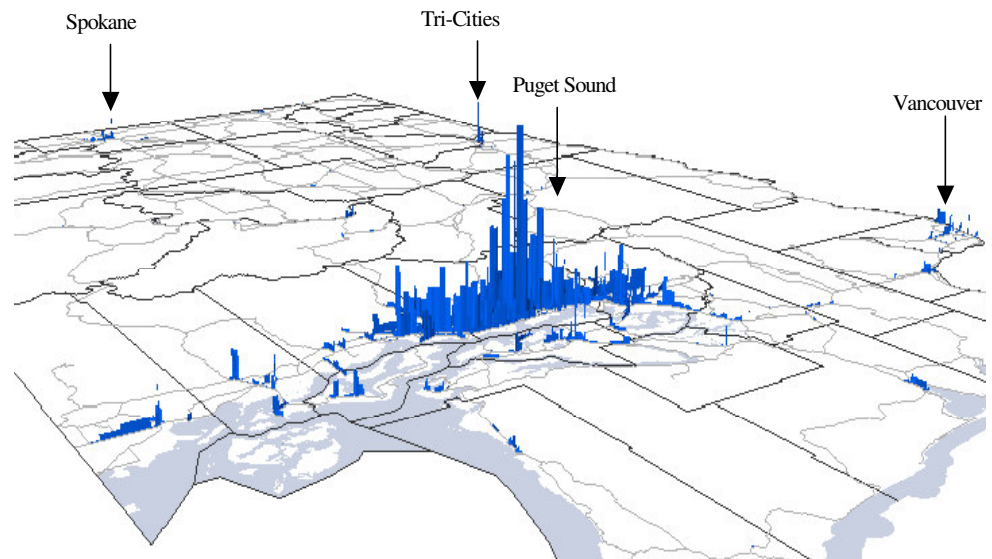
Congestion on the north-south corridor contributes to higher business costs. For example, South Sound manufacturers report paying total logistics costs averaging 16 percent of cost of goods sold, while in Spokane and Whatcom County those costs average 11 percent of cost of goods sold.

A major Less-Than-Truckload carrier is able to pick up two shipments per hour in Central Puget Sound vs. the industry benchmark of three per hour – adding 30 percent to the cost of each shipment.

The primary freight constraint on I-5 is from Central Puget Sound to the south. North of Central Puget Sound to Canada, the number of truck trips on I-5 drops by about two thirds.

Trucking companies may try to schedule around congestion patterns, but must meet customer demands for on-time service in preferred time windows.

**Total Daily Vehicle Hours of Delay Per Lane Mile**



# Moving Freight

## Address Freight Constraints in the I-5 Corridor Central Puget Sound to Oregon Border

### What's the Problem?

#### Corridor Completion

The north-south freight corridor system is incomplete between I-5 and Highway 509 and Highway 167, and between Highway 18 and Highway 167.

#### Failing Structures

If the Alaskan Way Viaduct fails, up to 110,000 trucks and cars (enough to fill two freeway lanes in each direction) will try to move to I-5, everyday, increasing I-5 congestion by nearly 40 percent. If the Viaduct isn't replaced, even with major investments in transit and local arterials, increased delay and congestion will ripple across the north-south corridor and through the regional transportation network.

#### Capacity Constraints

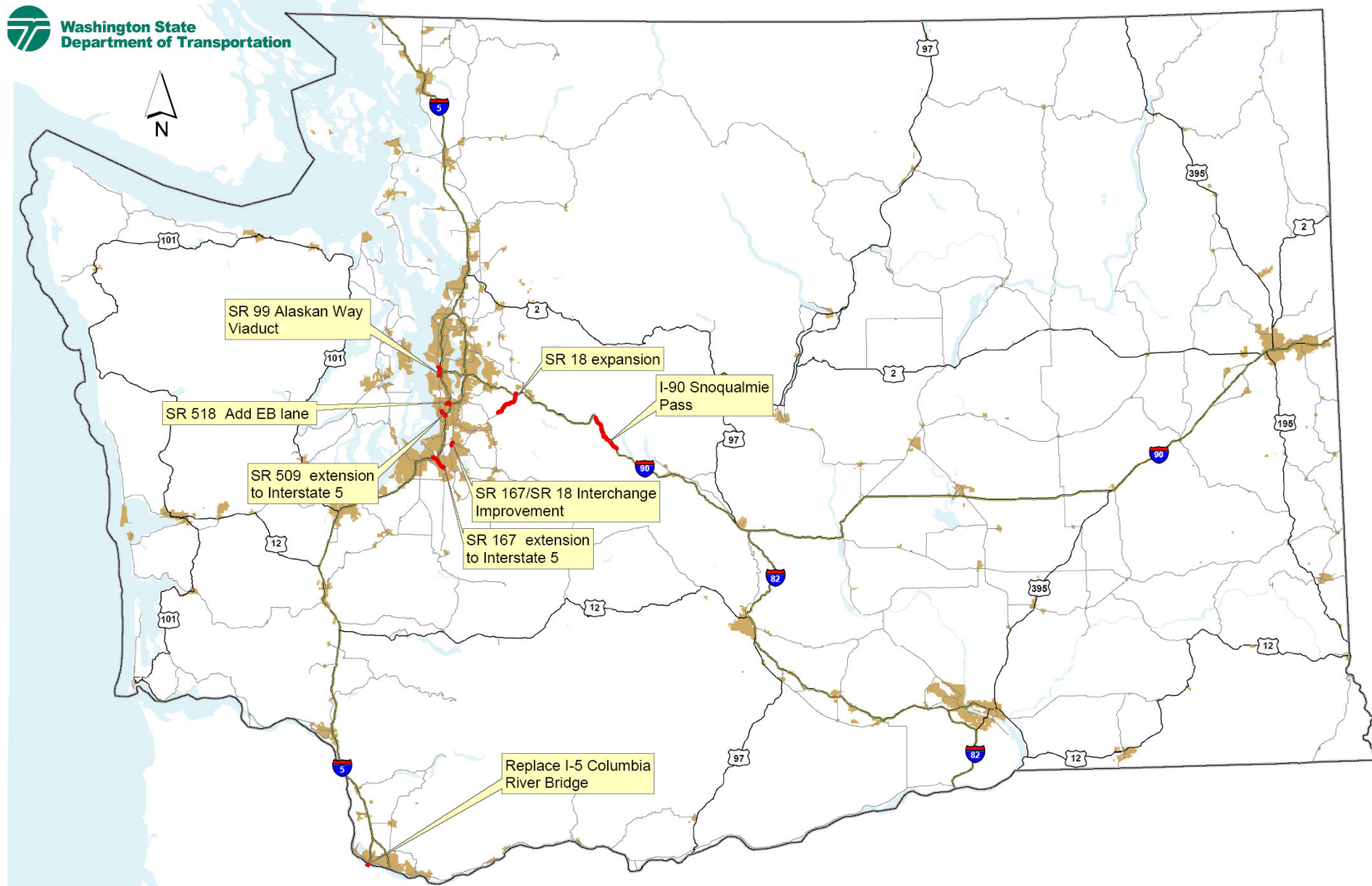
By 2020, the I-5 Columbia River Bridge will operate at capacity for almost 10 hours each day. Congestion will spread into the midday period, which is the peak travel time for trucks. Vehicle hours of delay during the evening peak period on truck routes will increase 92%. The value of truck delay will increase 140%, from \$14.1 million in 2000 to \$34 million in 2020.

Most of Washington State's air cargo flies through Sea-Tac International and King County Airports, therefore congestion on I-5 in Central Puget Sound, and eastbound on Highway 518 from Sea-Tac to I-5, directly impacts reliability and on-time performance of the entire state's air cargo system.

# Moving Freight

## Address Freight Constraints in the I-5 Corridor

Corridor Completion and Failing Structures in Washington's Primary Freight Corridors

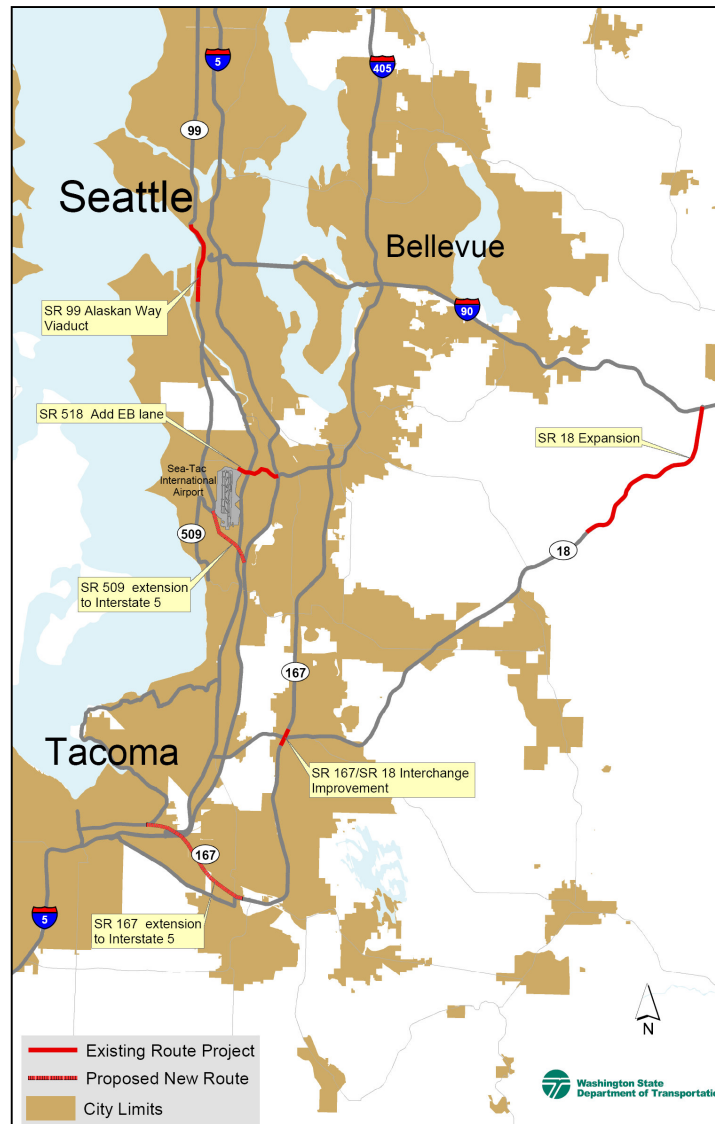




# Moving Freight

## Address Freight Constraints in the I-5 Corridor

### Corridor Completion and Failing Structures in Central Puget Sound



# Moving Freight

## Address Freight Constraints in the I-5 Corridor

### Description of Proposals

#### Projects

Analyze the benefits of a public-private truck-toll highway from Central Puget Sound to the Oregon border. This highway could be an extension of I-5, or follow the I-405/Highway 167/I-5 route.

Corridor completion of the major north-south freight corridor system:

- Highway 167 to I-5
- Highway 167 and Highway 18
- Highway 509 to I-5
- Complete Highway 18 to I-90
- Add a third eastbound lane on Highway 518 from Sea-Tac International Airport to I-5

Failing structures:

- Replace the Alaskan Way Viaduct
- Replace the I-5 Columbia River Bridge

#### Policy

Recognize the South Puget Sound warehouse district as a component of the state's Global Gateway system along with rail and port facilities, and preserve the warehouse district's proximity to the Ports of Seattle and Tacoma.

#### Operations

Continuously Improve Traffic Management System & Incident Response Program



# Moving Freight

Address Freight Constraints in the I-5 Corridor  
Long-Range: Add Freight Capacity in the Central Puget Sound North-South Corridor

## Description of Benefits/Impacts of Implementing the Proposal

Analyze the benefits of a truck-toll highway from Central Puget Sound to the Oregon border.

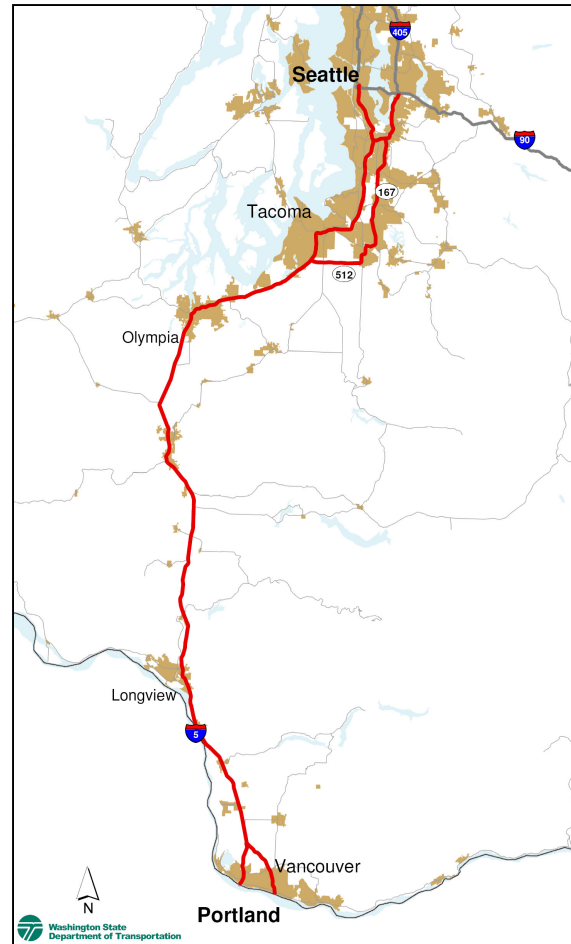
### Benefits

Add needed freight capacity in Washington's largest manufacturing center and market, Central Puget Sound.

Support Washington's integration with West Coast commerce, including national and international trade. California is the largest market on the West Coast and the most populous state in the nation.

Open capacity on I-5 for passenger vehicles.

Trucking industry supports improvements in north-south capacity that lower their overall costs.



| Type of Proposal                    |           |
|-------------------------------------|-----------|
| <input type="checkbox"/>            | Policy    |
| <input checked="" type="checkbox"/> | Strategy  |
| <input type="checkbox"/>            | Capital   |
| <input type="checkbox"/>            | Operating |

| Expected Benefits                   |                           |
|-------------------------------------|---------------------------|
| <input type="checkbox"/>            | Preservation              |
| <input type="checkbox"/>            | Safety                    |
| <input type="checkbox"/>            | Transportation Access     |
| <input type="checkbox"/>            | System Efficiencies       |
| <input checked="" type="checkbox"/> | Future Visions            |
| <input type="checkbox"/>            | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/> | Moving Freight            |
| <input checked="" type="checkbox"/> | Economy                   |
| <input type="checkbox"/>            | Health & Environment      |

|  |  |
|--|--|
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
| <input type="checkbox"/> All   | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |

|                              |  |
|------------------------------|--|
| Funded in Current Law Budget |  |
| <input type="checkbox"/> All | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |

# Moving Freight

## Address Freight Constraints in the I-5 Corridor Corridor Completion - Highway 167 to I-5

### Description of Benefits/Impacts of Implementing the Proposal

- Extend Highway 167 from its junction with Highway 161 to Highway 509.
- Relieve congestion in the south Puget Sound region by offering an alternative to I-5 and a link for movement of freight between the Port of Tacoma, I-5, I-405 and I-90.
- Provide alternative for trucks currently transporting freight through the City of Fife. Relieve congestion and delay on city streets now operating above capacity.
- Avoid more congestion-related delays in port freight transport, incompatibility of heavy truck use on residential surface streets creating unsafe conditions, and existing steep grades on Highway 18 from I-5 to I-90.



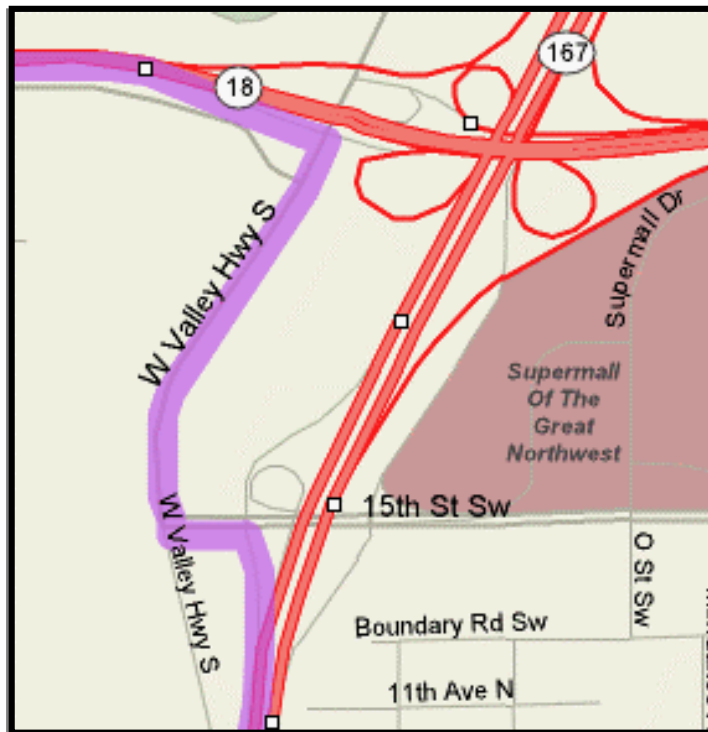
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|--|--|
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| Expected Benefits  |  |
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| <input type="checkbox"/>   | System Efficiencies  |
| <input type="checkbox"/>   | Future Visions   |
| <input checked="" type="checkbox"/>                                  | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| Funded in Current Law Budget   |  |
| <input type="checkbox"/> All   | <input checked="" type="checkbox"/> Part <input type="checkbox"/> None |

# Moving Freight

## Address Freight Constraints in the I-5 Corridor Corridor Completion – Highway 167 and Highway 18 Interchange

### Description of Benefits/Impacts of Implementing the Proposal

- Provide a freeway-to-freeway connection from eastbound Highway 18 to southbound Highway 167.
- Fully link the I-5 corridor to Highway 167.
- Decrease congestion, improve safety and increase freight mobility.



| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input type="checkbox"/>   | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input type="checkbox"/>   | Preservation   |
| <input checked="" type="checkbox"/>                                  | Safety   |
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| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
| <input type="checkbox"/> All   | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |
| Funded in Current Law Budget   |  |
| <input type="checkbox"/> All   | <input type="checkbox"/> Part <input checked="" type="checkbox"/> None |

# Moving Freight

## Address Freight Constraints in the I-5 Corridor Corridor Completion – Highway 509 to I-5

### Description of Benefits/Impacts of Implementing the Proposal

- Reduces congestion on I-5, Highway 518, and the I-5/ Southcenter Interchange during peak hours. Diverts over 5,000 trucks per day (nearly a lane of traffic) from I-5's Southcenter Hill during peak periods.
- Saves up to 12 minutes of travel time from Seattle to Tacoma. Freight carriers save over 1.2 million hours per year and \$60 million per year through reduced trip length and travel time.
- Creates a direct freight connection between Seattle and South Sound. South Sound has the largest concentration of manufacturing and wholesale/ distribution businesses in the Pacific Northwest.
- Provides direct southern access to SeaTac International Airport; connects SeaTac International Airport and the state's largest distribution district.

| Type of Proposal   |                           |
|--|---------------------------|
| <input type="checkbox"/>   | Policy                    |
| <input type="checkbox"/>   | Strategy                  |
| <input checked="" type="checkbox"/>                                  | Capital                   |
| <input type="checkbox"/>   | Operating                 |
| Expected Benefits  |                           |
| <input type="checkbox"/>   | Preservation              |
| <input type="checkbox"/>   | Safety                    |
| <input type="checkbox"/>   | Transportation Access     |
| <input type="checkbox"/>   | System Efficiencies       |
| <input type="checkbox"/>   | Future Visions            |
| <input checked="" type="checkbox"/>                                  | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/>                                  | Moving Freight            |
| <input checked="" type="checkbox"/>                                  | Economy                   |
| <input type="checkbox"/>   | Health & Environment      |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |                           |
| <input type="checkbox"/>   | All                       |
| <input type="checkbox"/>   | Part                      |
| <input checked="" type="checkbox"/>                                  | None                      |
| Funded in Current Law Budget   |                           |
| <input type="checkbox"/>   | All                       |
| <input checked="" type="checkbox"/>                                  | Part                      |
| <input type="checkbox"/>   | None                      |

SR-509/I-5 Freight and Congestion Relief Project



# Moving Freight

## Address Freight Constraints in the I-5 Corridor Corridor Completion – Highway 18 to I-90

### Description of Benefits/Impacts of Implementing the Proposal

- This several-phase project will widen Highway 18 to four lanes, from Auburn to I-90.
- Completing the corridor improvement to I-90 will prevent the nine hours of delay projected for 2020.
- The project is funded up to the Issaquah/ Hobart Road Interchange. Additional funding is needed for the remaining section to I-90.



#### Type of Proposal

- ☐ Policy
- ☐ Strategy
- ☒ Capital
- ☐ Operating

#### Expected Benefits

- ☐ Preservation
- ☐ Safety
- ☐ Transportation Access
- ☐ System Efficiencies
- ☐ Future Visions
- ☒ Bottlenecks & Chokepoints
- ☒ Moving Freight
- ☒ Economy
- ☐ Health & Environment

All or Part Included in  
'05 – '07 Commission  
Funding Recommendation?

- ☐ All
- ☐ Part
- ☒ None

Funded in Current Law Budget

- ☐ All
- ☒ Part
- ☐ None

**Project:** SR-18 - Maple Valley to I-90 Additional Lanes

Project Length: 7.6 miles, from milepost 20.8 to milepost 28.4 .

|                                      | Today | 2010     |       | 2020     |       |
|--------------------------------------|-------|----------|-------|----------|-------|
|                                      |       | No-Build | Build | No-Build | Build |
| Congested Hours per Day              | 4     | 7        | <1    | 9        | 1     |
| AM Peak Period Average Travel Speed  | 36    | 31       | 59    | 26       | 55    |
| PM Peak Period Average Travel Speed  | 22    | 18       | 59    | 18       | 55    |
| AM Peak Period Average Travel Time   | 12.6  | 14.6     | 7.7   | 17.2     | 8.2   |
| PM Peak Period Average Travel Time   | 20.9  | 24.9     | 7.8   | 25.0     | 8.2   |
| Daily Delay (vehicle hours per mile) | 126   | 279      | 0     | 499      | 4     |



# Moving Freight

Address Freight Constraints in the I-5 Corridor  
Corridor Completion – Add a third eastbound lane on Highway 518 from SeaTac International Airport to I-5

## Description of Benefits/Impacts of Implementing the Proposal

### Enhance freight access to hub airports in metro areas.

- Adds freight capacity and safety in a congested corridor complicated by many merge points and weaving conditions.
- Sea-Tac International Airport is the largest air cargo facility in Washington. Worldwide air cargo volumes are expected to double by 2015.
- Over 120,000 vehicles use Highway 518 everyday. Five percent, or 5,900, of these vehicles are trucks.
- Without action, Port of Seattle forecasts more than 30 minutes of delay with queues over a mile in length in this segment by 2025.
- Air freight is critical for high-value, time-sensitive goods. Shippers pay a premium to ship by air when products must arrive quickly. Thus, bottlenecks on highways connecting airports are especially damaging to air-freight dependent industries.
- Without a fast and reliable air cargo system, aerospace, medical equipment and high-tech manufacturers can't do business in Washington State. Washington-grown perishable agricultural products all ship by air.



| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input type="checkbox"/>   | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input type="checkbox"/>   | Preservation   |
| <input type="checkbox"/>   | Safety   |
| <input type="checkbox"/>   | Transportation Access  |
| <input type="checkbox"/>   | System Efficiencies  |
| <input type="checkbox"/>   | Future Visions   |
| <input checked="" type="checkbox"/>                                  | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
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| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| Funded in Current Law Budget   |  |
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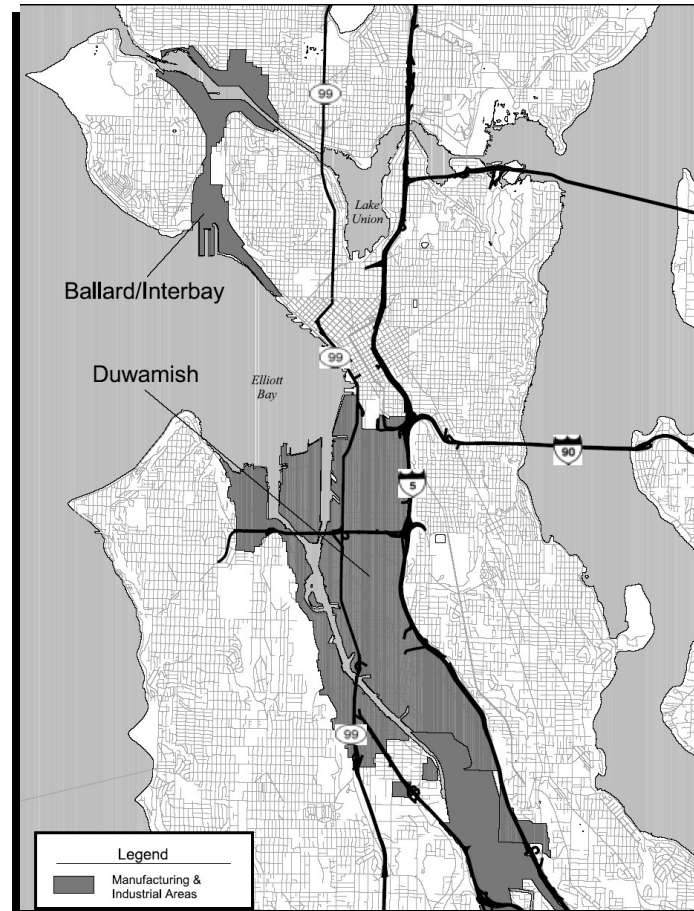
# Moving Freight

## Address Freight Constraints in the I-5 Corridor

Failing Structures - Replace the Alaskan Way Viaduct

### Description of Benefits/Impacts of Implementing the Proposal

- Prevent increased congestion on Washington State's most constrained major freight corridor: I-5 in Central Puget Sound.
- Viaduct failure will increase I-5 congestion by nearly 40 percent.
- Support the Ballard/ Interbay and Duwamish manufacturing industrial center, including the Port of Seattle facilities and mainline rail yards.
- The manufacturing and maritime sectors in Duwamish and Ballard/Interbay provide more than 121,700 jobs, 24 percent of the jobs in Seattle, and are projected to grow at least 10 percent by 2025.
- The North Pacific fishing fleet, based in Ballard, catches up to 40 percent of the total U.S. domestic fish harvest. The fleet is provisioned by Duwamish-based companies.



| Type of Proposal                    |           |
|-------------------------------------|-----------|
| <input type="checkbox"/>            | Policy    |
| <input type="checkbox"/>            | Strategy  |
| <input checked="" type="checkbox"/> | Capital   |
| <input type="checkbox"/>            | Operating |

| Expected Benefits                   |                           |
|-------------------------------------|---------------------------|
| <input checked="" type="checkbox"/> | Preservation              |
| <input checked="" type="checkbox"/> | Safety                    |
| <input type="checkbox"/>            | Transportation Access     |
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| <input type="checkbox"/>            | Future Visions            |
| <input checked="" type="checkbox"/> | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/> | Moving Freight            |
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| <input checked="" type="checkbox"/> | Health & Environment      |

|  |  |                               |
|--|--|-------------------------------|
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |                               |
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|                              |  |                               |
|------------------------------|--|-------------------------------|
| Funded in Current Law Budget |  |                               |
| <input type="checkbox"/> All | <input checked="" type="checkbox"/> Part | <input type="checkbox"/> None |

# Moving Freight

## Address Freight Constraints in the I-5 Corridor Failing Structures - Replace the I-5 Columbia River Bridge

### Description of Benefits/Impacts of Implementing the Proposal

- Support the growing economy of the Vancouver-Southwest Washington metropolitan area, by providing efficient access to industrial land, two railroads and the Ports of Portland and Vancouver.
- Trade is expected to increase 51 percent by 2020. Over 10,000 trucks per day move goods in the southwest I-5 corridor, currently. The value of these shipments is more than \$26 billion a year and is equivalent to one third of the metro area's gross product.
- Daily traffic volume across the bridge is expected to increase 44 percent, from 125,000 to 180,000.
- New interchanges and ramps will safely and efficiently handle large volumes of truck traffic accessing ports, rail yards and commercial areas.
- Support freight movement along the West Coast, which predominately moves on the I-5 corridor.



| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input type="checkbox"/>   | Strategy   |
| <input checked="" type="checkbox"/>                                  | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input checked="" type="checkbox"/>                                  | Preservation   |
| <input checked="" type="checkbox"/>                                  | Safety   |
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| <input type="checkbox"/>   | Future Visions   |
| <input checked="" type="checkbox"/>                                  | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| Funded in Current Law Budget   |  |
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# Moving Freight

## Address Freight Constraints in the I-5 Corridor

### Description of Benefits/Impacts of Implementing the Proposal

#### Policy

Recognize the South Sound warehouse district as a component of the state's Global Gateway system, along with rail and port facilities, and encourage proximity of the warehouse district to the Ports of Seattle and Tacoma.

#### Strategy

- Encourage land use that minimizes distance from container ports to major distribution centers. Large distribution centers generate hundreds of truck trips per day. Studies predict that port-associated trips will triple by 2020, and industry experts are reporting an even more rapid rate of volume growth in Central Puget Sound in 2005.
- Minimize the length of port-associated loop trips in Central Puget Sound to avoid unproductive truck trips on the state's most congested segment of I-5, thereby benefiting the economy and the environment.
- Preserving capacity on I-5 will buffer the state's most constrained transportation corridor.



| Type of Proposal   |  |
|--|--|
| <input checked="" type="checkbox"/>                                  | Policy   |
| <input checked="" type="checkbox"/>                                  | Strategy   |
| <input type="checkbox"/>   | Capital  |
| <input type="checkbox"/>   | Operating  |
| Expected Benefits  |  |
| <input type="checkbox"/>   | Preservation   |
| <input type="checkbox"/>   | Safety   |
| <input type="checkbox"/>   | Transportation Access  |
| <input checked="" type="checkbox"/>                                  | System Efficiencies  |
| <input checked="" type="checkbox"/>                                  | Future Visions   |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |  |
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| Funded in Current Law Budget   |  |
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# Moving Freight

## Address Freight Constraints in the I-5 Corridor Operations - Continuously Improve Traffic Management System and Incident Response Program

### Description of Benefits/Impacts of Implementing the Proposal

- Reduce incidents and non-recurring delay in the Central Puget Sound's I-5 Corridor.
- Industry can more reliably plan travel time and meet customers' on-time delivery requirements.
- More efficient utilization of existing infrastructure for freight movement.

| <b>Vehicle Hours of Delay At Travel Speeds Below 50 MPH</b> | Renton to Auburn SR 167 Southbound | Seattle to SeaTac I-5 Southbound | Redmond to Seattle SR 520 Westbound | Everett to Seattle I-5 Southbound |
|---|------------------------------------|----------------------------------|-------------------------------------|-----------------------------------|
| Total Vehicle Hours of Delay per Day                        | 1474                               | 860                              | 1086                                | 5947                              |
| Recurring Vehicle Hours of Delay per Day                    | 35%                                | 30%                              | 40%                                 | 48%                               |
| Non-recurring Vehicle Hours Delay per Day                   | 65%                                | 70%                              | 60%                                 | 52%                               |
| Source: Transportation Center                               |                                    |                                  |                                     |                                   |

| Type of Proposal   |  |
|--|--|
| <input type="checkbox"/>   | Policy   |
| <input type="checkbox"/>   | Strategy   |
| <input type="checkbox"/>   | Capital  |
| <input checked="" type="checkbox"/>                                  | Operating  |
| Expected Benefits  |  |
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| <input type="checkbox"/>   | Bottlenecks & Chokepoints  |
| <input checked="" type="checkbox"/>                                  | Moving Freight   |
| <input checked="" type="checkbox"/>                                  | Economy  |
| <input type="checkbox"/>   | Health & Environment   |
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| Funded in Current Law Budget   |  |
| <input type="checkbox"/> All   | <input checked="" type="checkbox"/> Part <input type="checkbox"/> None |

| <b>95 Percent Reliable Travel Time*</b> |                     |       |           |                                    |                                 |                          |
|---|---------------------|-------|-----------|------------------------------------|---------------------------------|--------------------------|
| <i>Based on 2001 Archived Loop Data</i> |                     |       |           |                                    |                                 |                          |
| Route                                   | Route Description   | Miles | Peak Time | Avg. Travel Time Without Incidents | Avg. Travel Time With Incidents | 95% Reliable Travel Time |
| I-5                                     | Everett to Seattle  | 23.7  | 7:25 am   | 37 minutes                         | 56 minutes                      | 62 minutes               |
| I-405                                   | Tukwila to Bellevue | 13.5  | 7:40 am   | 22 minutes                         | 34 minutes                      | 43 minutes               |
| SR 167                                  | Renton to Auburn    | 9.8   | 4:25 pm   | 15 minutes                         | 28 minutes                      | 39 minutes               |



# Moving Freight

## Study the State's Air Cargo System

### What is the Problem?

Air transportation plays a significant role in the movement of international and domestic air cargo, however, there is insufficient information and documentation on the origins and destinations of air cargo, value, and commodities shipped. There is also a need to understand air cargo constraints in the market place in order to identify strategies to move cargo more efficiently and effectively across state, international, and jurisdictional boundaries.



### Description of Proposal

A statewide air cargo study is needed to identify air cargo trends, origin and destination of cargo, and strategies to facilitate efficient movement of air cargo. Also, the study would identify existing airports that can accommodate air cargo movement and freight hubs. Ongoing regional planning efforts may help guide the development of a statewide air cargo study, such as information from the upcoming Puget Sound Regional Council air cargo freight access study.

### Description of Benefits/Impacts of Implementing the Proposal

Identification of strategies and performance measures to increase the overall effectiveness of air cargo and movement of freight in Washington State.

| Type of Proposal   |                           |
|--|---------------------------|
| <input type="checkbox"/>   | Policy                    |
| <input checked="" type="checkbox"/>                                  | Strategy                  |
| <input type="checkbox"/>   | Capital                   |
| <input type="checkbox"/>   | Operating                 |
| Expected Benefits  |                           |
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| <input checked="" type="checkbox"/>                                  | Future Visions            |
| <input type="checkbox"/>   | Bottlenecks & Chokepoints |
| <input checked="" type="checkbox"/>                                  | Moving Freight            |
| <input checked="" type="checkbox"/>                                  | Economy                   |
| <input type="checkbox"/>   | Health & Environment      |
| All or Part Included in '05 – '07 Commission Funding Recommendation? |                           |
| <input type="checkbox"/>   | All                       |
| <input type="checkbox"/>   | Part                      |
| <input checked="" type="checkbox"/>                                  | None                      |
| Funded in Current Law Budget   |                           |
| <input type="checkbox"/>   | All                       |
| <input checked="" type="checkbox"/>                                  | Part                      |
| <input type="checkbox"/>   | None                      |
| <input checked="" type="checkbox"/>                                  | Global Gateways           |
| <input checked="" type="checkbox"/>                                  | Made in WA                |
| <input checked="" type="checkbox"/>                                  | Delivering Goods          |

## Ideas for Additional Study?

Freight related issues such as security, safety and the environment are being considered in other parts of the update of the Washington Transportation Plan.

What did we miss?

We want the conversation about freight strategy to involve all the players

For a full copy of the freight report please go to:  
*[http://www.wsdot.wa.gov/freight/images/WTP\\_FreightUpdate.pdf](http://www.wsdot.wa.gov/freight/images/WTP_FreightUpdate.pdf)*